

SD Times

SOFTWARE DEVELOPMENT

The Industry Newspaper for Software Development Managers

MARCH 15, 2005

ISSUE NO. 122

EclipseCon Touts
New Partners, Projects3

Is Microsoft Oracle's
New Best Friend?3

Compuware Steers CARS
In New Direction5

Fiorano Revs Enterprise
Service Bus, MQ6

Zend Boosts PHP
With IBM Database Ties7

ANTs Inches Closer To
Microsoft, Oracle, Sybase ...8



Jef Raskin,
GUI Pioneer,
Macintosh
Creator, Dies ...10

Eclipse Rules
For Versata10

Segue SilkPerformer,
Performance Manager
Now for SAP12

NetManage Updates
OnWeb, Rumba
Host Access Tools20

Green Hills Releases
WiFi Kit, Universal
Trace Probe Adapter23

eCosCentric Ports
CEE-J VM; Aonix
Enhances PERC23

COLUMNISTS

HOLUB:
Is Software Engineering
An Oxymoron?28

O'BRIEN:
Microsoft's
Smart Client Move31

BINSTOCK:
Jakarta Commons:
Uncommonly Useful33

RUBINSTEIN:
Sun's Golden
Opportunity34

A BZ Media PUBLICATION \$7.95

www.sdtimes.com

UPON FURTHER REVIEW, JDO SPECIFICATION STANDS

BY YVONNE L. LEE

Sometimes, it's best to leave well enough alone.

Last September, Sun issued an open letter recommending a single persistence model between Enterprise JavaBeans (EJB) 3.0 and Java Data Objects (JDO) 2.0, and that long-term, the efforts should be within the work for EJB. That left members of the Java Community Process' J2EE/SE executive committee confused about whether work on JDO should continue.

As a result, the specification for JDO 2.0, JSR 243, was voted down 10 to 4 in January, with one company, Google, abstaining. But after an uproar from JDO users and a clarification

from Sun, the specification was approved in a Feb. 28 revote.

"We may have been confused as some of the others were as to which goals they were working toward," said Eric Newcomer, president of Iona, which initially voted against the specification.

However, the no vote to JSR 243 left JDO companies wondering whether their products would have a migration path that would still fit within the Java specification. These companies revolted.

"The big reason it was a problem for our customers is that they committed to a standard that the JCP had voted on

► continued on page 14

BEA 'Bows To Eclipse Tools Reality'

Joins open-source organization,
releases Workshop IDE as plug-in

BY YVONNE L. LEE

In a move BEA touted as making an investment in open source, but viewed by analysts as a concession to Eclipse's dominance in the tools market, BEA announced at EclipseCon that it is turning its WebLogic Workshop integrated development environment into an Eclipse plug-in and will co-lead the Eclipse tools platform project.

"BEA is basing our developer tools products going forward on Eclipse," said vice president

of marketing Bill Roth. "The next major release of WebLogic Workshop will be based on the Eclipse framework." A preview of the new version is slated for later this year, he said, but he declined to specify a more precise time frame.

An implementation of WebLogic Workshop will be delivered as a set of Eclipse plug-ins. It will have IBM's Standard Widget Toolkit interface, but will include tools necessary for

► continued on page 16

BEA'S CONTRIBUTIONS TO OPEN SOURCE:

APACHE BEEHIVE: A framework for developing on some J2EE application servers and containers.

ECLIPSE POLLINATE: A set of tools for developing to the Beehive framework.

ECLIPSE WEBLOGIC WORKSHOP: BEA's IDE, which will now run as an Eclipse plug-in.

APACHE XMLBEANS: Binds XML data to equivalent Java code.

Gates: 'Interoperability Solved'

Analysts call executive e-mail part truth, part spin

BY JENNIFER DEJONG

Microsoft makes software designed to work in heterogeneous computing environments.

That's the gist of a newsletter that Microsoft chairman Bill Gates e-mailed to several hundred thousand developers, IT professionals and business decision makers last month.

Titled "Building Software That Is Interoperable By Design," the message is the most recent entry in Microsoft's Executive E-mail series, which periodically publishes missives from the company's top execu-



SD Times File Photo: Alan Zelditch

'Our software works with a vast array of technologies in the marketplace.'

—Bill Gates, Microsoft chairman

tives. "Our software works with a vast array of technologies in the marketplace, whether they shipped last week or decades ago," Gates said in the newsletter. "Microsoft software can talk to mainframes and minicomputers

from IBM and other manufacturers; other operating systems such as the Mac OS and various Unixes including Linux."

Asked to weigh in on the message, analysts mostly dis-

► continued on page 17

SQL SERVER 2005: SOON, BUT STILL WAITING

BY JENNIFER DEJONG

It's not here yet. But the long-awaited update to SQL Server has inched just a little bit closer.

Microsoft spelled out pricing for four editions of its SQL Server 2005 database late last month, increasing the price of the high-end Enterprise edition by 25 percent. The company also added a new Workgroup edition for small businesses, which sits between the no-cost Express edition that replaces Microsoft Data Engine (MSDE), and the Standard edition, aimed at medium-sized businesses.

"We are still on target for summer 2005 delivery," said

► continued on page 20

SPECIAL REPORT

Where Are the Brains
In Your Embedded
Development
Organization?25



SoftwareFX

Zero To Chart

In Less Than An Hour!



9:04 am

To learn more about the Chart FX products visit www.softwarefx.com and decide which one is right for your platform and target. Then download the fully-functional for 30-days trial version.

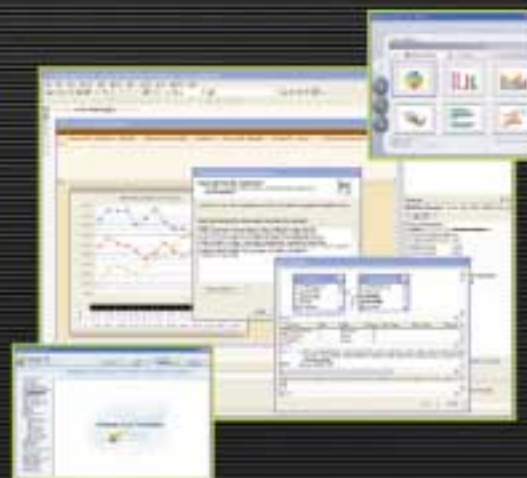
9:07 am

After download, simply install the product appropriate for your needs, platform and target environment.



9:13 am

Once you open Visual Studio, simply drag a Chart FX chart to your form from the component toolbox. The Chart FX Wizard will launch to help get you started with the functionality, look and feel of your desired chart. The Chart FX Resource Center is also available to help with any questions you may have. Then populate the chart by connecting to your desired data source. Then Run. ➤



9:58 am

Your application will be displayed with a chart that makes any data look great! Plus your end users will have interactive capabilities to change things such as gallery type or color scheme.



Ready... Set... Download!


Chart FX

US: (800) 392-4278 • UK: +44 (0) 8700 272 200 • Check our website for a Reseller near you!

www.softwarefx.com

©2005 Software FX. All rights reserved. Chart FX is a registered trademark of Software FX, Inc. All other brands are owned by their respective owners.

EclipseCon Touts New Partners, Projects

Open-source foundation focuses on evolving new top-level initiatives

BY ALAN ZEICHICK

BURLINGAME, CALIF. — The second annual EclipseCon conference, held here the first week in March, focused on highlighting many of the Eclipse Foundation's new strategic developers, as well as the projects that those companies will be managing.

EclipseCon is produced by the Eclipse Foundation; this year's conference drew just more

than 1,000 attendees, according to Ian Skerrett, the nonprofit's director of marketing.

The technical program was geared primarily toward those organizations contributing to the construction of the Eclipse software infrastructure, which are divided into several groups: nine "strategic developers," large vendors who contribute cash, developers and intellectual property; four "strategic con-

sumers," large companies that use the Eclipse technology in their products; and committers and "add-in providers," dozens of businesses that also contribute to the Eclipse ecosystem.

There also were sessions for enterprise developers who use the Eclipse code for in-house development, but it was clear that they weren't the primary focus of this conference.

SD Times' parent company,

BZ Media, along with several other publishing companies, is an "associate member" of the Eclipse Foundation.

NEW TOP-LEVEL PROJECTS

The Eclipse Foundation is organized around a series of top-level projects, which are overseen by the strategic developers. EclipseCon emphasized five new strategic developers, each of which is playing a significant role in either managing an existing top-level project or initiating new projects.

BEA is taking over Eclipse's existing Web Tools Platform project, and is proposing to lead a new Language Tools Project, which will make it easier to support additional programming languages within the Eclipse framework. BEA also has said that it would merge its own-source AspectWerkz project with Eclipse's existing AspectJ project, to create a single aspect-oriented programming initiative.

Borland, a founding member of the consortium, will be heading up application lifecycle management projects, as well as a newly proposed project to build a graphical model-

THE STRATEGIC ECLIPSE MEMBERS

STRATEGIC DEVELOPERS

ActuateBEA
Borland
Computer Associates
IBM
Intel
QNX
Scapa
Sybase

STRATEGIC CONSUMERS

Hewlett-Packard
MontaVista
SAP
Serena

Source: Eclipse Foundation

WHAT ABOUT JBUILDER?

During a press conference at EclipseCon showcasing the five new strategic developers, Borland was questioned regarding its intentions for supporting Eclipse-based technologies as well as its own JBuilder 2005 Java IDE as a separate product.

"We have a very large customer base that uses JBuilder today in mission-critical software development. The base ranges from some commercial IT to people doing DoD [Department of Defense] work. We will absolutely continue to support those guys," said Raaj Shinde, vice president of product strategy and architecture for Borland. "But you will also see a lot of the technology in JBuilder in the commercial offering that Borland will provide on the Eclipse platform."



SD Times Photo: Alan Zeichick

Borland will continue supporting the Eclipse IDE and JBuilder, says Shinde.

—Alan Zeichick

Is Microsoft Oracle's New Best Friend?

Plug-in lets .NET developers use Oracle's database, instead of SQL Server

BY JENNIFER DEJONG

Are Microsoft and Oracle cozying up to each other? It certainly looked that way at Microsoft's VSLive conference last month, when Oracle senior vice president Andrew Mendelsohn delivered a keynote address titled "Bringing the Power of Oracle Database to .NET." At the conference, Oracle released the beta version of a Visual Studio plug-in that lets Microsoft developers use Oracle Database 10g instead of SQL Server.

"We have a lot of customers who are using .NET and Oracle," said Santanu Datta, Oracle's senior director of Windows technology. "And we also want to attract [.NET developers] who use SQL Server." Expected the second quarter of this year, Oracle Developer Tools for Visual Studio .NET tightly integrates Oracle's database with the Microsoft development environment, enabling developers to

perform tasks such as dragging and dropping rows and columns from Oracle tables onto Windows forms, and boosting productivity with features such as automatic code generation and context-sensitive Oracle help, Datta said. It replaces the Oracle Data Provider for .NET, released in 2002, which let Microsoft developers use Oracle's database but was not fully integrated with Visual Studio.

The plug-in is the fruit of an alliance forged in May 2004, when Oracle joined Microsoft's Visual Studio Industry Partner (VSIP) program, which provides ISVs access to Microsoft technology so they can ready their tools to work within the company's development environment. The partnership has obvious benefits for Oracle, but less clear is why Microsoft wants to make it easier for .NET developers to use a competitors' database. "It's up to us to make sure

[Oracle developers] have the best set of tools for developing on Windows," said Microsoft's Nick Abbott, manager of the VSIP program. "Oracle has a huge customer base that is running Oracle on Windows, and Visual Studio is the most productive developer tool for building Windows apps."

Both Microsoft and Oracle insisted that the partnership was business as usual, even though the two companies compete in the database, development tool and, to some degree, operating system arena. "I don't know if I would characterize the relationship as competitive," said Oracle's Mark Townsend, senior director of database product management. He said that Oracle is no more aligned with the Java and Linux camps than it is with .NET and Windows. "Oracle lets you do your data management" no matter what operating system,

hardware or development tools are used, he said.

Oracle sells Java-based development tools and supports Linux and other Unix variants, as well as Windows. "There are realities where customers have different databases and we support them," added Microsoft's Abbott, noting that Microsoft also supports IBM's DB2 database. But he admitted that having Oracle join Microsoft's VSIP program was significant. "The relationship is getting stronger. Both companies are doing a good job of acknowledging a lot of customers on Windows."

What's more, Abbott said, the industry is growing up a little bit, and today competitors are less apt to criticize one another than they were a few years ago. "Customers are demanding we work together, and everyone realizes interoperability and Web services are a large part of the story," he said. ■

ing framework based on its Together technology.

Computer Associates, which joined Eclipse as a strategic developer in December, will be leading a new Enterprise Management Tools Project, designed to build integration hooks and frameworks for source configuration management and change management systems.

Scapa Technologies, which builds performance and application monitoring tools, upgraded its Eclipse membership to strategic developer. Scapa worked to found the Hyades Tools Project in 2002, and continues to lead aspects of that project.

Sybase, in its new role as a strategic developer, has proposed a Data Tools Management Project. The project will focus on managing application connectivity to databases, developing SQL statements, and database administration; it also will evolve specific tools for object-relational mapping, XML-relational mapping, and extract-transform-load tasks.

NEW CODE FROM ECLIPSE

At the conference, the Eclipse Foundation formally announced the release of BIRT 1.0, the initial implementation of a business intelligence and reporting tools framework. BIRT includes a report object modeler, a report designer, a report-generating engine and a chart generator.

Also released at the show was the first developer release of Eclipse Web Service Tools, which handles authoring of WS-I-compliant WSDL documents, and XML schemas. ■



**The
Fastest
are already
using DSM!**



MetaEdit+ is the Leading DSM Tool

MetaEdit+[®] allows you to generate full code directly from models. Your expert developer defines a modeling language and generator in MetaEdit+ Method Workbench. Other developers just model in MetaEdit+ and full product code is generated automatically.

Method Workbench provides a simple yet powerful tool suite for designing your language concepts, their properties, associated rules, symbols and generators. Without having to write a single line of code MetaEdit+ gives you editors, browsers, multi-user and multi-platform support.

MetaEdit+ has been used to build hundreds of DSM languages, some illustrated here with examples.

What about yours?

Download an evaluation version and build your first DSM language in an hour.

DSM

Domain-Specific Modeling

Domain-Specific Modeling raises the level of abstraction beyond programming by specifying the solution directly using domain concepts. The final products are generated from these high-level specifications. Industrial experiences of DSM consistently show it to be 5-10 times faster than current practices.

This automation is possible because both the language and generators need fit the requirements of only one company and domain. Your expert defines them, your developers use them. For example, DSM for cell phone software would have concepts like "Soft key button", "SMS" and "Ring tone", and generators to create calls to corresponding code components.

Since your expert specifies the code generators - for your domain and your components - the resulting code is better than most developers write by hand. DSM fulfils the promise of model-driven development.

To join the fastest, visit www.metacase.com



Compuware Steers CARS in New Direction

Version 5 drives details on QA efforts to desktops of corporate executives

BY JENNIFER DEJONG

Compuware is driving CARS to a new destination: the desktops of corporate executives.

Earlier this month, the Detroit-based company launched version 5 of Compuware Application Reliability Solution (CARS), its offering for managing software quality initiatives. The previous version was aimed at development managers and testing teams.

But CARS 5 also provides data to "C-level" executives so they can see how quality-assurance efforts are faring and make software delivery decisions accordingly.

In the past, when a CIO asked if software was ready yet, the answer often was no, but beyond that, it was difficult to ascertain why, said Gery Plourde, Compuware's CARS director.

With CARS 5, a CIO can say, for example: "Okay, the defects are low. Testing is 70



'How your performance testing tool compiles its scripts has become less important. It's really about communication.'

—Gery Plourde,
CARS director at
Compuware

percent complete. All we have left is the low-priority tests. Let's release the software," he said.

CARS, which is often sold in conjunction with consulting services from Compuware or its partners, provides a methodology as well as project management and workflow capabilities for overseeing software QA initiatives.

CARS 5, which starts at

US\$3,000 per user, also includes Compuware's QA-Director (for test management), QALoad (for load testing), Reconile (for requirements), Test-Partner (for functional testing) and TrackRecord (for defect tracking).

But the testing tools themselves are less important than CARS' project management and reporting capabilities, Plourde said. "Metrics bubble

up from tools, allowing executives to make informed decisions on how ready apps are for delivery," said Plourde. "CARS 5.0 lets companies think about QA efforts more strategically."

WEIGHING THE RISKS

New to this version is a cost-of-quality executive report, which lets managers determine where to focus improvement efforts for the best return on investment.

"It costs less to remediate defects closest to the source. But it is hard to show the value of doing that," said Plourde. CARS 5 does that by assigning a level of risk to each application function, in the requirements phase of the development life cycle.

For instance, in an e-commerce application, the function that lets shoppers place items in a cart would be assigned a higher priority than the function

that checks inventory levels.

Some functions don't need to be tested at all, said Plourde, noting that many QA efforts pertain to maintenance releases, where much of the software has not changed. "Without CARS you would arbitrarily test everything."

Also new is the ability to integrate data from CARS with ChangePoint, a tool for managing IT projects, which Compuware acquired from a company of the same name last year.

Plourde said Compuware, as well as competitors such as IBM Rational, has done a good job of creating productivity tools to automate the QA process.

But tools alone are not enough.

"How your performance testing tool compiles its scripts has become less important," he said. "It's really about communication." ■

SOLUTIONS FOR LANGUAGE INTEGRATION

JuggerNET now available
for seamless, easy
Java-.NET integration

Extend Java to .NET with JuggerNET,[™]
the only technology that is as easy and
reliable as pure Java or pure .NET programs.

Check out these solutions:

- ★ Use any Java Message Service with .NET
- ★ Provide .NET clients easy access to EJB
- ★ Integrate Java with COM through .NET
- ★ Call J2EE servers from VisualBasic

Download a free trial today:
www.codemesh.com

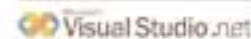


Codemesh is a registered trademark of Codemesh, Inc. 11111 11111, Carlsbad, CA 92008

.NET Imaging takes flight

- document and photo imaging
- unsurpassed technical support
- runtime royalty free licensing

Optimized for



Build thin or thick client imaging applications supporting Annotations, TWAIN scanning, PDF reading and writing, Barcode Recognition, and more.



www.atalasoft.com toll free 866-568-0129
Fast and Dependable Imaging for .NET

Fiorano Revs Enterprise Service Bus, MQ

Configuration management and systems availability enhancements top new releases

BY YVONNE L. LEE
AND ALAN ZEICHICK

Fiorano has updated its Enterprise Service Bus and messaging middleware, adding fea-

tures that it claims improve configuration management and systems availability.

Fiorano ESB 4.0 introduces a new business component

model, which is designed to give developers more control over how loosely coupled and decoupled business components are able to talk over the

bus, according to Atul Saini, Fiorano's CEO and CTO.

The loosely coupled components include applications and services that are part of a

request/reply service-oriented architecture. The decoupled elements are those that use a classic event-driven architecture. The new business component architecture unified both those approaches, according to Fiorano.

"The biggest enhancement [in ESB 4.0] is the business component model," said Saini, who added that using this model, organizations can specify computers and business components as being in different stages of a process. By doing this, an organization could allocate certain computers for production processes and others for development processes, he claimed.

"You can do configuration management natively because of the component model," he said. "You can't do this kind of thing today."

An advantage of the new business component model, according to Fiorano, is that it unifies both SOA and EDA into a single technology base, using a single state repository, development tools, and management consoles.

A typical installation of ESB 4.0 costs between US\$100,000 and \$250,000, depending on features and configuration.

The company also released version 8.0 of FioranoMQ, its message-queuing middleware. The system introduced new software-only high-availability capabilities, said vice president of engineering Amit Gupta. The message queuing server had long offered hardware-based high-availability using arrays of shared disks; the new software-based system is slightly slower but is much less expensive to implement, he said.

FioranoMQ 8.0 costs between \$8,000 and \$14,000 per installation for a medium-sized business, according to company spokeswoman Kristin Kolodzinski.

Other new features in FioranoMQ 8.0 include bidirectional J2EE Connector Architecture adapters that can link distributed transactions and application servers, JMX-based systems monitoring, C/C++ libraries and a connection manager based on the Java NIO (New I/O) spec. ■



How is your CMMI process development team doing?

Is your organization burning valuable time, money, and resources developing CMMI® compliant processes from scratch? With processMax, your software development organization immediately begins managing software development and maintenance projects in guaranteed compliance with the CMMI. processMax is the web-based project management system providing your managers and developers with step-by-step procedures, integrated document management, and automated workflow. processMax also includes a complete measurement and reporting capability. Measurement collection and report generation are fully automated — giving managers real-time, fact-based insight into all aspects of project progress. processMax is the proven solution — as verified by more than 50 successful independent appraisals.

Please visit us at www.pragmasystems.com to learn more about processMax.



pragma SYSTEMS CORPORATION

Toll Free: 877.838.PMAX

Direct: 703.796.0010 x.4

www.pragmasystems.com

E-mail: Info@pragmasystems.com

GSA Schedule Contract No. GS-35F-0620K. processMax is a registered trademark of pragma SYSTEMS CORPORATION. CMMI is a registered trademark of Carnegie Mellon University. Copyright © 2005 pragma SYSTEMS CORPORATION.

Zend Boosts PHP With IBM Database Ties

Beta release of new language core ships with Cloudscape, DB2 drivers

BY DAVID RUBINSTEIN

IBM last month announced a working relationship with Zend, creator of a popular PHP integrated development environment that IBM hopes will extend its reach into that community of developers.

Later this month, Zend will release a beta of Zend Core for IBM, which will ship with the now-open-source Cloudscape database. In addition, IBM will establish a "PHP Zone" on its developerWorks Web site that will house papers and tutorials and also will host five bloggers, including Zend co-founders Zeev Suraski and Andi Gutmans. The PHP portal on that site went live on Feb. 28.

From IBM's standpoint, what made the relationship happen was the release of PHP 5, which added an object-oriented layer on top of the tagging structure that led to "a slew of folks looking at PHP to create data objects to look at databases," said David Boloker, IBM's chief technology officer for emerging technologies.

In addition, Pear, which was an extension library for calling Web services, now is part of the core of PHP 5. This, Boloker said, enables calls to Web services regardless of whether they are based on Java, C++ or .NET.

"If you're using PHP today, you have to begin with downloads and building the page yourself," said Zend's vice president of marketing, Pamela Roussos. "This provides an out-of-the-box experience."

Zend Core for IBM, which Zend will sell and support, also includes database drivers for DB2 and will work on Linux x86 and Opteron systems. The next version of the release will run on AIX and PowerPC systems, Boloker said.

Roussos said Zend would be open to supporting databases from other vendors, but added that nothing specific is in the works at this point.

SOURCEFORGE AHEAD

In a separate initiative, IBM is releasing some 30 pieces of software to the SourceForge community of open-source developers, according to Boloker.

Among the software to be hosted there are Jikes, IBM's fast Java compiler that seeks to

strictly adhere to Java language and virtual machine specifications; a Bluetooth network simulator; a performance inspector; UDDI4j; and JTOpen, the


open-source version of IBM's Toolbox for Java.


"There are lots of projects on SourceForge in the same area, so it seems like a good fit,"

Boloker said.

The Bluetooth code includes several simulations, including an ad hoc environment with several Bluetooth devices oper-

ating in an indoor wireless channel and TCP/IP simulations to allow performance evaluations of those applications over Bluetooth. It also gives a view into the performance of device discovery and paging protocols spelled out in the Bluetooth specification, according to the company. ■





We personalize your needs...

in document creation and conversion for
PDF, RTF, DHTML, EXCEL®, JPEG and TIFF™ formats!

PDF Converter New Version 2.5

The PDF Converter enables you to create secure PDF documents from any Windows® application. The full featured DLL, ActiveX or .NET interface gives you complete control over the PDF creation process. You can also print, optimize, append, merge, email and do a lot more with your PDF files.

New Features In Version 2.5

- Applying digital signatures to PDF documents (Professional version only).
- Embedding of Type1 (Postscript) fonts in the PDF file.
- Generation of CMYK colored PDF files.
- Automatic generation of bookmarks and hyperlinks.
- Direct link to document management systems.
- Improved support for Office XP/2003.
- Improved support for third party PDF files for printing, merging or appending.

PDF Creator New Version 2.0

The PDF Creator ActiveX control enables you to create secure PDF documents on the fly and to view, print and process existing PDF documents. Additional plugins also enable you to save your documents in RTF, HTML, EXCEL®, JPEG or TIFF™ formats.

New Features In Version 2.0

- Applying digital signatures to PDF documents (Professional version only).
- Saving documents page by page makes it possible to create very large documents with minimum memory consumption.
- Rendering parts of a PDF document to a device context created by the calling application.
- Opening a PDF document as a background or template for the main document.
- Automatic insertion of bookmarks and hyperlinks by analyzing the document contents.
- Enhanced functions for adding, deleting and moving pages.
- Custom object types can be defined and completely managed outside of the PDF Creator.

For complete evaluations, technical notes and online purchasing visit: www.amyuni.com

| | |
|---|--|
| <p>USA & CANADA Toll Free: 1-866-826-8864 Support: (514) 866-9227</p> <p>Europe Sales: (+33) 1 30 61 07 97 Support: (+33) 1 30 61 07 98 Info: sales@amyuni.com Customizations: management@amyuni.com</p> <p><small>All trademarks are property of their respective owners. © 1995-2005 AMYUNI Technologies All rights reserved.</small></p> | <p>Available licenses: Single-User Server Royalty-free Developer Unlimited Corporate OEM</p> <h2 style="font-size: 2em; margin: 20px 0;">Our priority is customer satisfaction!</h2> <p style="font-size: 1.5em; margin: 0;">www.amyuni.com</p> |
|---|--|

ANTs Inches Closer to Microsoft, Oracle, Sybase

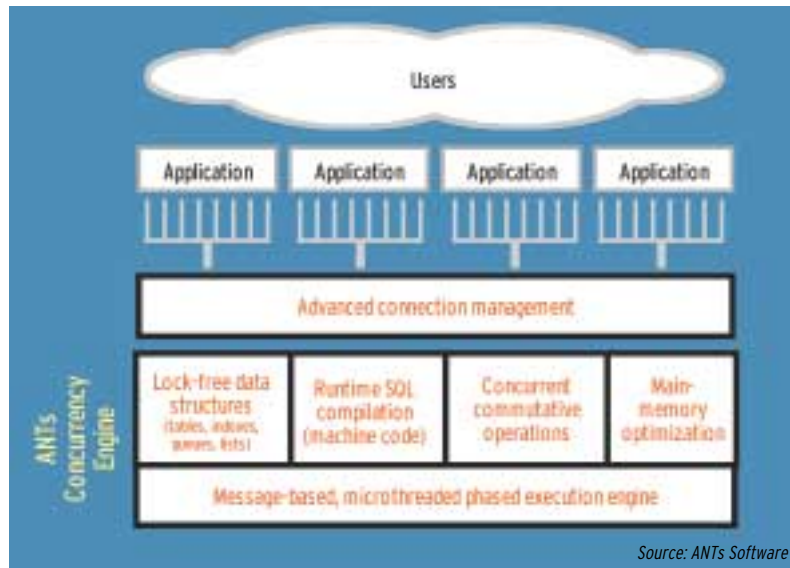
Redundancy features such as failover, 'hot standby' make Data Server 3.0 harder to squash

BY EDWARD J. CORREIA

With the redundancy features of ANTs Data Server 3, ANTs Software claims its high-speed transaction processing system is faster and more reliable. The company also claims the system is more compatible with the SQL databases of Microsoft and Sybase than version 2, and positions it as a faster alternative to those and others from IBM, Oracle and NCR database division Teradata.

"We've implemented triggers, stored procedures and data-side compatibility," said Boyd Pearce, ANTs' president and CEO, all of which simplifies migration of applications built for competitive databases to ANTs Data Server (ADS). "We've proved it by converting about a half-dozen Microsoft and Sybase applications to our platform." ADS 3 also now supports binary- and character-large objects (BLOBs and CLOBs), including the ability to perform indexing and SQL operations.

Pricing remains fixed at



ANTs Data Server 3.0's redundant servers can be tapped for BI, EAI or warehousing.

US\$25,000 per server processor for the enterprise edition, which permits access by an unlimited number of applications; the \$5,000 professional edition permits access by a single application.

Boyd said that in addition to the obvious redundancy benefits

of failover for mission-critical applications and for disaster recovery, hot standby machines also can be used as database replicas "for business intelligence or reporting, data warehousing and even as an interface with other applications for enterprise application integration."

For companies with large numbers of users for such applications, Boyd said replication can help improve performance by dedicating one or more data servers for those applications. "That guarantees that you don't have a disruption of your primary server that is doing your transaction work. This gives you the scalability to put these clusters in place." Connections between servers are automatically maintained and load-balanced, he added. "That's good from a developer point of view; you don't have to log in and do this manually."

ANTs Data Server achieves performance gains, according to Boyd, primarily by means of six techniques, which include an absence of record locks, compiling all SQL commands, efficient client management, and use of

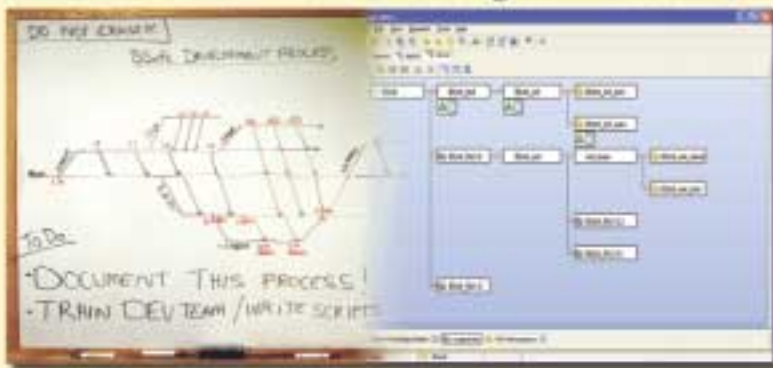
main memory as primary storage, not as a caching layer as in competitive solutions. "So when you're programming, it's like using arrays in C or C++," as opposed to other solutions that assume disk to be the primary storage. "[With those,] you have to do reads, writes, blocks and deblocks before you get to the data," he said. With the ANTs method, "when you want to write to disk, you write in big pages like virtual memory," he explained. "That's much more efficient use of memory."

PROVE IT

Between now and May 31, the company says it will port any application written for Microsoft, Oracle or Sybase databases to ADS 3 in two weeks at no cost and with no obligation to buy. "They don't have to invest significant team resources to evaluate us," said ANTs CFO Ken Ruotolo. "We hope it will be evident that our product does what we say it does." ■

You Must Evolve To Succeed

Move your development process from the whiteboard to where it belongs... in AccuRev



AccuRev solves the SCM architecture problem

AccuRev is the first and only out-of-the-box, client/server SCM solution to enable advanced dynamic parallel development through its unique drag-and-drop project and object re-parenting. AccuRev's proven award-winning stream-based architecture frees your development teams from productivity killing and error prone static SCM processes. Stop constraining your development process with a legacy SCM tool. Download your free evaluation software and see why AccuRev is the only SCM system designed to mirror your optimal development process.



AccuRev
Defining Change in SCM
www.accurev.com
800.383.8170

FREE Download

"Best Practices in Software Configuration Management"
by Ulam Narsu, SCM Analyst
formerly of Giga/Torster
www.accurev.com/vp

© 2005 All Rights Reserved. AccuRev is a registered trademark of AccuRev Inc. All other marks are properties of their respective owners.

Adopting Agile Development? Steer Clear of the Roadblocks:

- **Poor visibility** slows your response to fast-changing customer needs
- **Can't easily synchronize** the day-to-day efforts of your distributed team
- **Costly IT headaches** with multiple systems tracking requests, requirements, tests, defects & tasks



Roll out Agile with Rally™ Software Development Management On Demand

Effective Agile project management combines high communication with low bureaucracy so your entire organization can embrace change and speed delivery of customer value.

Learn! Attend "The Road to Agile" webinar series and register for your FREE "Instant-on" test drive at rallydev.com/sdt



RALLY
software development

deliver early, deliver often

www.rallydev.com/sdt

Developers love creating code... Managers crave process control... Bridge the gap with Seapine CM.

Software development is a team effort with developers, testers, and management all working toward one goal — delivering the highest quality product on time.

Built on award-winning TestTrack Pro and Surround SCM, Seapine CM brings structure to source control and issue management, improving communication while accelerating product development.

Seapine CM helps your team...

Define custom change request workflows, putting you in control of who makes changes and who authorizes the closure of issues.

Associate source code changes with defects or change requests.

Gain a thorough understanding of how much work remains before project completion.

View complete audit trails of what changed, why, and by whom.

Understand how close you are to release—how many issues are open, how quickly are you closing them, how many are re-opened?

Successful team-based development requires the proper process supported by the right development tools. Tools that are flexible, easy to use, secure, and scalable—like Seapine CM.

Features:

Complete source code control with private workspaces, automatic merging, role-based security and more.

Comprehensive defect management—track change requests, bug reports, feature requests and more.

Fast and secure remote access to your source files and defects — work from anywhere.

IDE integration with JBuilder, Visual Studio, Eclipse, and other leading development tools.

Advanced branching, triggers, email notifications, fully configurable workflows, and customizable fields put you in complete control of your process.

Open interfaces—triggers, email notifications, SOAP support, XML data exchange, and ODBC clients.

Scalable and reliable cross-platform, client/server solution supports Windows, Linux,

Achieve major improvements in software development performance through better tool integration and process automation. Manage defects, development issues, and change requests with award-winning TestTrack Pro and gain complete control over your source code and change process with Surround SCM. Seapine's integrated change management tools are feature rich, highly scalable, Web enabled, and cross platform. Streamline your development process with Seapine CM and help your team deliver quality software products on time, every time.

Learn more about the
Seapine CM suite at
www.seapine.com
or call 1-888-683-6456



News Briefs

NEW PRODUCTS

Database vendor McObject has introduced **ExtremeSQL**, an implementation of SQL for use with all versions of the company's **ExtremeDB** embedded database. The ExtremeSQL API, which is designed to be entirely embedded within an application, implements most of the ANSI SQL-89 specs for insert, update, delete and select statements . . . GemStone Systems is offering **GemFire JDBC**

Interceptor, a pluggable extension for its GemFire Enterprise data integration software that is used to tune database access performance without requiring any modification to the application code. GemFire JDBC Interceptor uses a JDBC 2.0 driver to monitor SQL queries, configure individual queries or patterns of queries, and distribute database query result-sets in memory and on disk across multiple nodes . . . Microsoft is offering **Software Development Kit for Microsoft Office Small Business Accounting**, an SDK to help developers build applications and plug-ins for Microsoft's new accounting software, which is scheduled to be generally available in the third quarter of 2005 . . . Telerik has launched **Sitefinity**, a Web content management system for ASP.NET that uses the company's rapid application development control set. Sitefinity lets developers and authorized users configure a site's user interface controls via a browser, without using Visual Studio. Pricing ranges from US\$995 for a single domain accessible by 10 users to \$4,995 for a single domain for unlimited users . . . eXo Platform has announced the first commercial release of its open-source Web content portal system, called **eXo Platform**. The Java-based portal, which has been hosted under the ObjectWeb Forge project, can be licensed for a starting price of €1,490 per processor; support and maintenance adds 20 percent annually. The portal supports the Java Portlet API and Web Services for Remote Portals, and uses JavaServer Faces; it includes an Eclipse plug-in for managing the life cycle of a portal project . . . Reactivity is offering **Federated Identity Model for Web Services**, a reference architecture based on the Liberty Alliance trust model that lets developers ensure transactional

GEMSTONE

trust across multi-hop Web services and maintain a unified record of the identities associated with a transaction, while providing the performance required for production environments.



Reactivity

UPGRADES

Syntax has revised **Serna**, its visual XML editor. Version 2.0 adds support for large documents, graphical tables and instantly switchable XSLT parameter sets. This version also improves XML-aware search and replace, adds a new PDF publisher and incorporates a C++ API. The US\$199 Serna runs on Linux, Mac OS X and Windows . . . Atlassian Software Systems has updated **JIRA**, its issue-tracking system, to introduce a customizable CSV importer, an improved SOAP and XML-RPC remote interface and new plug-in capabilities. JIRA 3.1 also improves cross-browser compatibility. Pricing for the J2EE-based software ranges from US\$1,200 to \$4,800 per server, depending on feature set desired; there is no per-user cost . . . AutomatedQA has announced that the latest builds of its **TestComplete**, **AQtime** and **Automated Build Studio** tools are interoperable with Microsoft's Visual Studio 2005 Team System. All of these tools' functionality can be accessed from within Team System . . . The online auction site



eBay has enhanced its developer program, at developer.ebay.com. The company now offers a single eBay Web Services API, which supports SOAP, XML, .NET, Java and REST; new telephone support options for developers; and new notification services for changes to the eBay APIs . . . Version 4.1 of Polar Lake's **Integration Suite** extends support for non-XML data and messaging formats, including Excel, EDI, UN/EDIFACT EDI and HIPAA. It also adds support for the WS-Addressing specification and enhances operational monitoring of BPEL-based business processes . . . TimeSys has launched an upgrade program to migrate its customers to the **Carrier Grade Linux 2.0** specification. The program, offered as an annual subscription for US\$46,000, upgrades any Linux

► continued on page 20

Jef Raskin, GUI Pioneer And Macintosh Creator, Dies at 61

BY YVONNE L. LEE

Jef Raskin, a creator of the original Macintosh user interface, died in his California home on Feb. 26, after suffering from pancreatic cancer. He was 61.

He specialized in creating computer interfaces that worked more efficiently with people, rather than trying to make people work more efficiently with them. This work included not only his work on the Macintosh, but also his work at Information Appliances, which he founded in 1982 after leaving Apple, and as an author and teacher.

"He was pretty much offended when the computer people would boast that computers are something too hard for those lowly humanities people to understand," said his son, Aza Raskin. "He felt that computers are tools for people to use, to be used for them. People should not have to be conformed to the way computers work."

Raskin was employee No. 31 at Apple and worked on the original Macintosh team in 1979. He named the Macintosh project after his favorite variety of apple, the McIntosh, modifying the spelling for copyright purposes.

He said that he already had been working on both the



Jef Raskin holds a model of the original Lisa computer.

Macintosh project and its predecessor, the Lisa computer, when Steve Jobs paid a visit to what was then Xerox PARC Labs.

Raskin had made a point of noting that the Macintosh interface owed its existence to others besides those at the PARC facility, however. For example, in his article, "Holes in the Histories," he noted Doug Englebart's creation of the mouse and windows at Stanford Research Institute and the invention of the microprocessor as important contributions that happened outside PARC. In his 2000 book, "The Humane Interface," Raskin coined the term and founded the field of "cognetics," which he described as "the ergonomics of the mind."

Raskin also had been a mathematician, sculptor and professor, in addition to playing with the San Diego Symphony as a recorder soloist and starting two model airplane companies. His sculptures have been exhibited at New York's Museum of Modern Art, and one is included in the permanent collection.

Raskin created the Raskin Center for Humane Interfaces (RCHI), which will soon release a preview of Archy, a culmination of his design principles. Archy redesigns the basic building blocks of computing to demonstrate an entirely new paradigm for computer use.

Archy is both a play on the Center's acronym and an allusion to humorous poems by the late newspaper columnist Don Marquis about a cockroach named Archy and a cat named Mehitabel.

RCHI will continue under the technical leadership of his son.

Raskin's life and work are the subject of a documentary in progress, at jefthemovie.com. He is survived by his wife of 23 years, Linda Blum, his children, Aza, Aviva and Aenea, as well as two "children in all but name," Jenna Mendez and Rebecca Fureigh. ■

Eclipse Rules for Versata

BY JENNIFER DEJONG

For rules vendor Versata, Eclipse is king.

The Oakland, Calif., company was expected to announce earlier this month that it has readied its J2EE-based rules development environment to support Eclipse 3.0.

"Versata 6 ships with Eclipse 3.0 with our tools integrated," said the company's senior director of product marketing, Paul Koenig. Eclipse's ability to exchange metadata will enable developers to more easily import data, such as models from tools such as Rational XDE, into Versata. The previous version of Versata was sold as a stand-alone offering.

Unlike rules offerings from companies such as Fair Isaac, in Minneapolis, and ILOG, in Mountain View, Calif., Versata is not just a rules engine and manager designed to separate the if-then rules that govern business decisions from the source code to which they apply. It also is a complete J2EE development environment. "We generate the entire application, not just [if-then] rules," said Koenig.

But the company uses the rules metaphor to refer to other aspects of the application, including user interfaces and workflow processes and transactions, he added.

New to 6, which starts at

US\$7,500 per developer, is improved exception handling.

For instance, if the application included a transaction rule that said, "A new order cannot put a customer over its credit limit," the order isn't automatically rejected when the limit is exceeded, said Koenig.

"Instead, the application goes to the next step that deals with workflow, to determine whether the credit limit can be increased," he said.

Also new is support for the MySQL database, in addition to the DB2, Oracle, SQL Server and Sybase support provided in previous versions. ■


```
getProjects();  
finished = yesterday;
```



New Crystal Reports XI takes the pressure out of deadlines.

Visual Report Designer

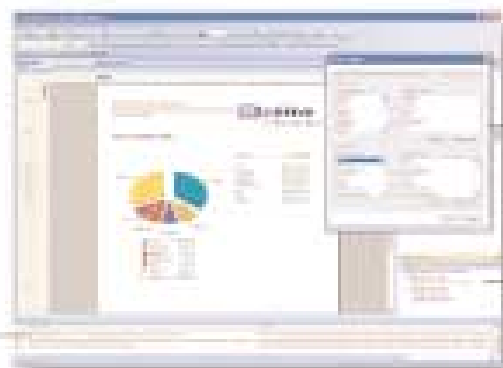
Get reporting done on time with an updated point-and-click designer.

NEW Dynamic Cascading Prompts

Minimize report maintenance with automatically updated pick lists and cascading prompts.

Cross Platform Development

Leverage development skill with support for multiple deployment platforms (Windows, Unix, Linux).



Repository Explorer

Reduce report design time by reusing existing report objects across applications.

NEW Report Dependency Checker

Improve QA. Quickly find broken links, formula errors and dependency issues.

NEW Crystal Reports Server

Publish reports to the web for secure viewing, printing and exporting with a new report server option.

You won't just beat deadlines, you'll make them look foolish. New Crystal Reports® XI, from Business Objects, adds a host of new functionality designed to reduce the time involved in creating, integrating and developing reporting solutions. An enhanced designer, extended API and new deployment options help enable you and your development team to integrate industry standard reporting into your applications in record time.

NEW Free Runtime Licensing

Also new to Crystal Reports XI Developer Edition is a royalty free runtime license which allows for unlimited internal corporate deployment of the Crystal Reports .NET, Java™ and COM (RDC) report engine components without having to pay additional licensing fees for multiple servers or CPUs.

Take the pressure out of deadlines with Crystal Reports XI. Visit www.businessobjects.com/dev/p27 for full product details, information on our new free runtime license or for a free eval download. To contact us directly please call 1-888-333-6007.

Segue SilkPerformer, Performance Manager Now for SAP

BY YVONNE L. LEE

SAP support is at the heart of updates to Segue Software's SilkPerformer 7.0 and SilkCentral Performance Manager 2.8, a package the company refers

to as Software Quality Optimization for SAP.

SilkPerformer, a load-testing application, and SilkCentral Performance Manager, for testing applications in production

from an end user's perspective, also are available separately. Segue previously has offered combined packages for Chordiant, E.piphany, Lawson, Oracle Applications, PeopleSoft

and Siebel ERP applications.

According to senior director of product marketing Chris Belthoff, Segue added SAP support not only because of SAP's position in the ERP market, but

also because of the complexity of SAP applications, which tend to be mission-critical.

"These are very complex, very distributed applications that SAP sells to the outside world," Belthoff said.

The SAP support is designed to test areas of SAP applications that interact with one another and with other enterprise applications, Belthoff said.

"We have some powerful ways of being able to test middleware components," he said. "These features speak of the ability to provide improved integration."

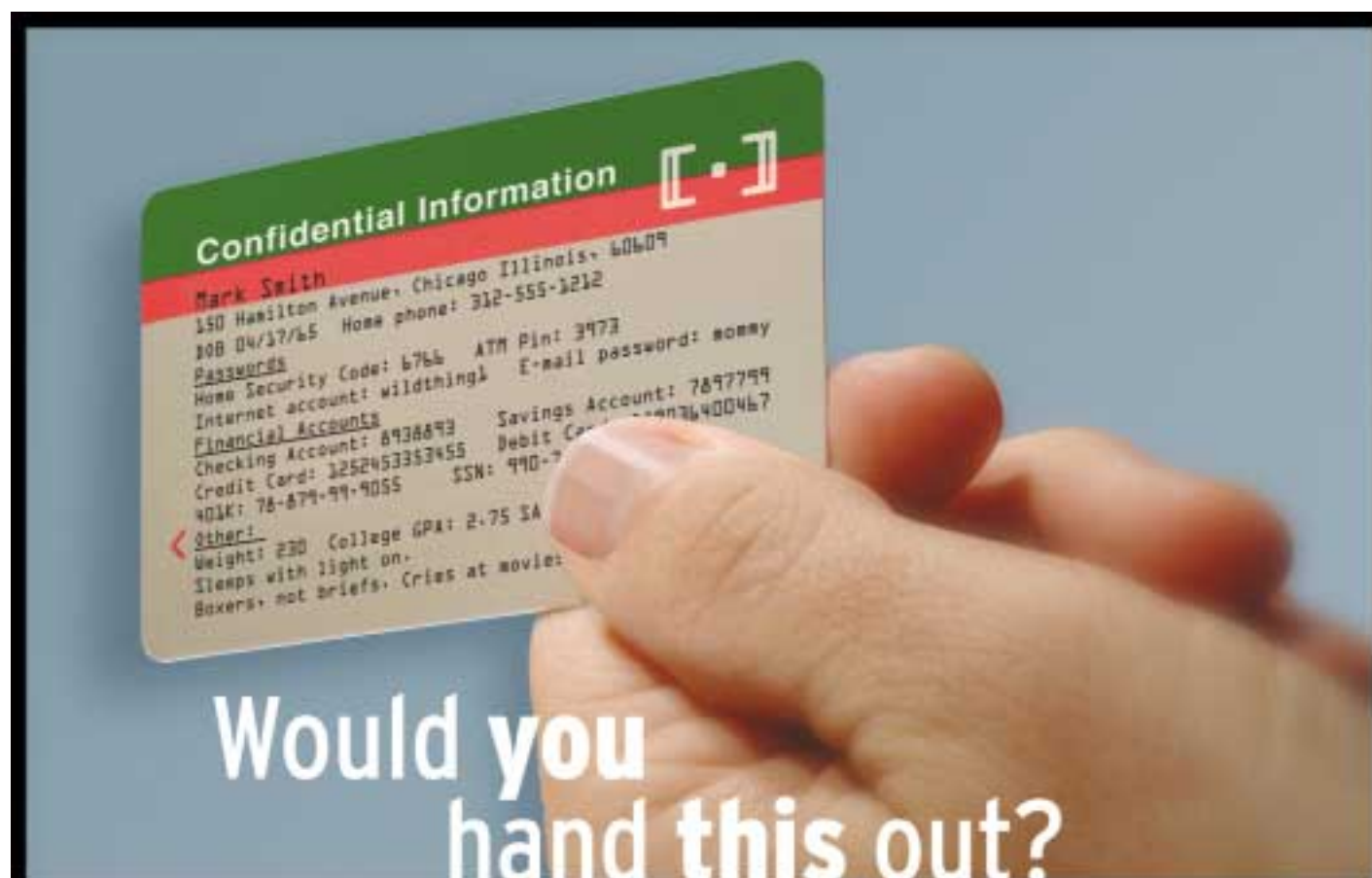
The ERP-application-specific features enable SilkPerformer and SilkCentral Performance Manager to test functionality of prepackaged applications.

SilkPerformer 7.0 adds a Java Remote Method Invocation (Java RMI) recorder, which makes it possible for Java objects to be invoked by other Java Virtual Machines, including those on other computers. This feature records the client/server methods invoked using Java RMI.

Another new feature is that SilkPerformer 7.0 can now import JUnit and NUnit test results and perform regression tests on them, he said. By importing results from these tests, quality assurance teams will not need to manually create the tests that will be included in the regression tests, according to Belthoff.

SilkCentral Performance Manager carries across the added Java RMI support found in SilkPerformer. "I would say for the things we're introducing for SilkCentral Performance Manager, it's really the same thing, but for postproduction performance," he said. It enables organizations to monitor in live postproduction environments the same performance characteristics that SilkPerformer monitors for preproduction applications, he added.

The SilkCentral Performance Manager application, designed to test performance by mimicking the end user's behavior, strengthens the Web user imitation features by imitating users refreshing the page or loading pages before all images have loaded. ■



Then why are you handing out your source code?

Releasing software without protection can make your confidential information available for anyone to grab.

Be PreEmptive. Use
Dotfuscator® Professional



to help protect your .NET programs prior to release. Dotfuscator Professional has deep Visual Studio .NET integration for seamless configuration and superior protection against reverse engineering. Dotfuscator Professional will optimize program size to conserve memory and improve load times.

To introduce you to our product, Microsoft includes a lite version of Dotfuscator in every copy of Microsoft's Visual Studio .NET. For professional use, download a fully functional trial version at www.preemptive.com/sdt.

And to protect your Java programs there's DashO, the premiere Java security and optimization tool.



When it comes to software protection, the best solutions are PreEmptive.

PreEmptive Solutions

The best solutions are PreEmptive®

www.preemptive.com | 216.732.5895

Announcing the Second Annual

Software Test & Performance **CONFERENCE**

**More than 45
keynotes, tutorials
and classes!**



SEE WHAT PEOPLE SAID ABOUT LAST YEAR'S CONFERENCE:

"This was the most practical conference I have been to in 18 years."

Mary Schafrik
Fifth Third Bank
B2B Manager/QA & Defect Management

"Extremely informative, and talking to colleagues in the field was incredibly enlightening."

Shari Pagley
Sunrise Senior Living
Testing Supervisor

"Very diverse set of sessions, passing great and door-opening information and techniques at a level that many can comprehend. The speakers were excellent and approachable. The conference was very well organized!"

Jessica Navarette
Software Engineer
Alion Science & Technology

"Definitely go for it. It's worth every minute and second of your time."

Felix Choy
Avaya Inc.
Software Engineer

"Good for hands-on test managers and testers."

Steve Boykin
Deputy Program Manager
Citizenship and Immigration Services
Department of Homeland Security

**Block Out the Dates:
November 1-3, 2005
at the Roosevelt Hotel
New York City**

www.stpcon.com • www.stpcon.com • www.stpcon.com • www.stpcon.com



BZ Media

Produced by
SD Times
The Industry's Newspaper for Software Development Managers

**Software Test
& Performance**

Upon Further Review, JDO Specification Stands

◀ continued from page 1

and approved," said Neelan Choksi, president of SolarMetric, which makes Kodo JDO. "Our customers felt that they were buying into a standardized way of doing object persistence

that was approved by the JCP."

Furthermore, JDO 2.0 is a specification for object-based persistence based on work that already exists, whereas the work for EJB 3.0 is still several years away.

As a result, customers of SolarMetric and other JDO products signed a petition at JDOcentral.com urging the JCP's executive committee to reconsider its vote.

"The fact that 1,000 devel-

opers signed the petition in favor of JDO 2.0 is interesting in light of 221 people participated in the election [for membership on the executive committee]," said Choksi.

To resolve the situation, the

committee met, and Sun issued a list of frequently asked questions to clarify the migration path and how the two specifications would merge.

The reconsideration balloting overturned the earlier vote.

The biggest reason for the change was that most of the companies wanted only a clarification of the two specifications' relationship, while the abstaining companies have an interest in proprietary object persistence methods used in their own products.

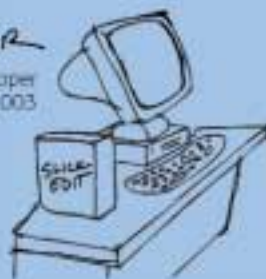
"It's really a fine balancing act. JDO has been a standard for almost five years now," said specification lead Craig Russell of Sun. "It's a very mature, widely adopted specification. Back when JDO started, we were all looking at EJB, and there were two very different specifications. JDO is the standard for [Plain Old Java Object] persistence today. JSR 220 [EJB 3.0] is working on a POJO persistence, but it will take some time."

For its part, Sun commented that it would like to see rapid convergence in the persistence model used in the two specifications, but added "as spec lead for JDO, Sun has no desire to abandon or disenfranchise the JDO community."

Intel, which like Iona had initially voted against the specification and changed its vote upon clarification, suggested that future situations be handled within the committee, rather than through open letters. ■

"When accepting this job, my only request
was that SlickEdit be waiting for me when I arrived."

JEFF MCARTHUR
Game Developer
and SlickEdit user since 2003



Now *that's* slick thinking.

Here at SlickEdit, we often think only one thing is slicker than our software—the developers who use it. For more than 16 years, our multi-language development tools and advanced code editors have supported the world's most skilled professionals, whether they're developing on Windows, Linux, UNIX, or Mac OS. We know that our products enable faster, more accurate coding. Apparently, our users think so too.

slickedit
www.slickedit.com

See what you think. Download a FREE trial at www.slickedit.com/trial or call 1.800.934.3348.

CHANGES BETWEEN JDO 2.0 AND 1.0

- Additional APIs that provide a closer alignment with J2EE.
- A common method for mapping to database.
- Support for disconnected operation.
- Removed requirement for binary compatibility to the Reference Enhancement contract.
- Removed requirement that only classes, not interfaces, be persistent.
- Extended range of query return values to include projected fields, collections of instances identified in navigational expressions, and aggregate data.
- Support for bidirectional and composition relationships, including cascading deletions.
- Minor usability updates.

Source: Java Community Process

Database Zen.



The art of database connectivity by JNetDirect.

As a leader in Java database connectivity, our JDBC drivers are used in mission-critical enterprise applications worldwide. And when you choose JNetDirect, you also get unparalleled technical support. ■ **JSQLConnect**, the best-of-breed native JDBC driver for Microsoft SQL Server. ■ **JDBTunnel** simplifies deployment by tunneling through firewalls. ■ **JSecureConnect** adds powerful encryption to your database connection. ■ **JDataConnect** connects to ODBC data sources from Java. *Download a trial version today* and see why our drivers are the perfect fit for your application.

jnetDirect
Expert Software Components

www.jnetdirect.com • (800) 995-8534 • (703) 880-3800

Expert software components for expert developers.

Copyright © 2000 JNetDirect Inc. All rights reserved. Java and JDBC are registered trademarks of Sun Microsystems, Inc. Microsoft is a registered trademark of Microsoft Corporation.

BEA Joins Eclipse, 'Bows to Tools Reality'

◀ continued from page 1

working with BEA's WebLogic Server, and specifically with the Pollinate framework, which BEA released to the Eclipse community in 2004. The tools will be open-source, said senior

product marketing manager Pieter Humphrey.

The software will be available as a single installation that includes the Eclipse framework or as separate modules for those who already have

Eclipse, he said.

The move ties BEA to the top Java development environment. The Eclipse IDE was used by more than 55 percent of respondents to a BZ Research survey on enterprise Java devel-

opment platforms and tools completed in November 2004. IBM's WebSphere Studio, which is based on Eclipse, came in second with reported use by 21 percent of respondents. BZ Research is a division of BZ Media,

publisher of SD Times.

BEA's Roth said the company was investing more than US\$1.5 million into the Eclipse effort. "BEA is joining Eclipse in a very big way," he said. "We have been contributing to Eclipse and Eclipse projects for some time. We're actually joining as a board member and strategic developer."

However, analysts viewed the move as a concession that Eclipse has won the tools wars, and that BEA needed to put its efforts elsewhere.

"I think there has been a pattern," said Wayne Kernochan, president of Infostructure Associates, "when enterprises move to open source sort of saying, 'I'm not going to dominate this particular market, and it's not my core aim anyway. I will be focusing on other areas. I don't want to dominate this market; I want a defensible niche.'"

"I think they're bowing to reality," said Shawn Willett, senior analyst at Current Analysis, regarding BEA's move to the open-source platform. "I think they were hesitant to say that when IBM controlled Eclipse."

BEA began working with Eclipse last June on the Pollinate project, which would enable Eclipse tools to work with Beehive, BEA's open-source version of the Workshop IDE that was submitted to the Apache Software Foundation. Beehive works with BEA's WebLogic server and with the Apache Tomahawk container. Pollinate is overseen by Instantiations.

In addition to moving Workshop to Eclipse, BEA is heading up the platform tools working group and is merging its aspect-oriented programming work with Eclipse's AspectJ.

Current Analysis' Willett said combining its aspect-oriented programming efforts with IBM's will simplify BEA's open-source portfolio.

"We're at the state right now where there's a lot of redundancy in open source. BEA is going to have to face that," he said. Other moves have only added to the confusion, he said. For example, BEA's joining Eclipse places Beehive in a precarious position, he said. "It's a little bit of a muddle. Is Beehive going to be pushed through Eclipse or Apache or both?"

In addition, the JRockit engine's memory profiler and leak detection engine will be donated to the community, Roth said. ■

Extraordinary data deserves extraordinary charting.

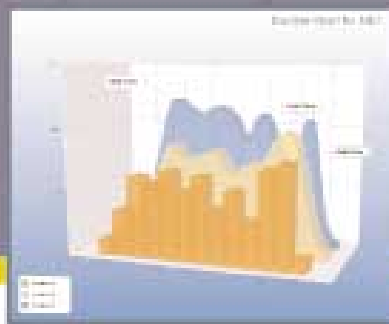
Advanced Charting, Advanced Results

Integrating advanced, award winning .NET Charting into your ASP.NET and Windows Forms applications is easier than you think.

To learn more, visit our website, download a full evaluation copy of Dundas Chart for .NET and experience our Data Visualization solutions for yourself.

www.dundas.com

Dundas
Chart
for .NET



Dundas
Data Visualization

Microsoft
Visual Studio .NET
Technology

Winner of the
'SDTimes 100' award
two years in a row.

SDTimes
2004
100

www.dundas.com
(416) 467-5100
(800) 463-1492

Development Solutions for Visual Intelligence™

E-Mail From Gates: 'Interoperability Problem Solved'

◀ continued from page 1

missed Gates' letter as run-of-the-mill marketing speak. "Interoperability is a marketing concept," said Dale Vecchio, a research director at Gartner. "They all want you to buy all of their stuff," he said, referring to Microsoft, as well as to IBM, Oracle, SAP and Sun. "Some of the specifics [in the e-mail] are factually correct. But I am hardly of the mind that Microsoft has become the pinnacle of interoperability."

Analysts didn't argue with Gates' claim that Microsoft is "working with the industry to define a new generation of software and Web services based on eXtensible Markup Language (XML), which...opens the door to a greater degree of 'interoperability by design' across many different kinds of software."

Microsoft has done an excellent job of providing Web services technology, noted Anne Thomas Manes, a vice president and research director at Midvale, Utah-based Burton Group. "But IBM is also a top supplier of Web services," she said.

Gary Barnett, an analyst at U.K. research firm Ovum, said that while Microsoft is playing by the rules when it comes to Web services, "it's not because they have a passion for interoperability. It's because Web services define the battleground between Microsoft and IBM," he said. "It's almost breathtaking that this is a serious letter on Microsoft's Web site," he added.

'DEEPLY PATRONIZING'

More troubling to Barnett is Gates' assertion that Microsoft's Host Integration Server, which enables mainframe connectivity, is a "product focused squarely on interoperability." HIS doesn't offer two-way interoperability, Barnett said. "It allows a Web service to make a call to a mainframe, but not vice versa." A Microsoft spokesman disputed Barnett's statement, saying: "That might have been the case prior to HIS 2004, but the latest version...enables Windows-initiated calls to an IBM S/390 or zSeries mainframe system and IBM mainframe-initiated calls into a Windows Server System."

Barnett also took issue with Gates' statement: "The open-source development approach encourages the creation of many permutations of the same type

of software application, which could add implementation and testing overhead to interoperability efforts." While there is nothing to stop anyone from introducing an alternative Linux kernel, this isn't something that

open-source developers do, said Barnett. "[The statement] is deeply patronizing to the open-source community. If I were an open-source developer, I would find it insulting."

With his e-mail, Gates is also

targeting the troops inside Microsoft, said Tom Murphy, a vice president of research services at Meta Group. "He is saying, 'Here is our key message,'" he said, in much the same way that he rallied the troops around

the Internet in the 1990s. The interoperability message is "a stake in the ground, a feel-good message for customers and a directive for the software groups," Murphy said.

But ultimately, "interoperability is in the hands of the customer, not the software vendor," added Gartner's Vecchio. ■

Programmer's Paradise®

Your best source for software development tools!

GUARANTEED BEST PRICES*

Download your software from our website at a lower price than anywhere else. If you find a lower price elsewhere, we'll match it. We'll beat the price, and still offer our same quality service and support!

***Terms of the offer:**

- Offer good through March 31, 2005.
- Applicable to pricing on current versions of software listed.
- March issue price only.
- Offer does not apply towards software already in competition with.
- Subject to some terms and conditions.

LEADTOOLS Raster Imaging Pro for .NET

by LEAD Technologies

Extend and simplify the .NET framework and GDI+ with LEADTOOLS. Support for over 150+ file formats including TIFF, JPEG, GIF, PNG, and GIF using various compression schemes like JBIG, JBIG2000, LZW, CCITT 4/3/2, and CMYK. Scan, capture, 200+ image processing filters, high speed display (resize, rotate, quality controls), and much more. Lots of sample source code to get you started quickly!

Paradise # L05 033F
\$829.99

www.programmersparadise.com/lead

dtSearch Web with Spider

Quickly publish a large amount of data to a Web site, with "blazing speeds" (CNET Web Content) searching.

- Features over a dozen indexed and indexed data search options.
- Highlights hits in XML, HTML, and PDF, while displaying links and images; converts other files ("Office", ZIP, etc.) to HTML with highlighted hits.
- Spider adds a third-party site to a site's own searchable database.
- Optional API supports SQL, C++, Java, and all .NET languages.

Single Server
Paradise # D29 0736
\$888.99

www.programmersparadise.com/dtsearch

c-tree Plus®

by FairCom

With unparalleled performance and sophistication, c-tree Plus gives developers absolute control over their data management needs. Commercial developers use c-tree Plus for a wide variety of embedded, vertical market, and enterprise-wide database applications. Use any one or a combination of our flexible APIs including low-level and TSQL C APIs, simplified C and C++ database APIs, SQL, ODBC, or JDBC. c-tree Plus can be used to develop single-user and multi-user multi-server applications or client-side applications for FairCom's robust database server - the c-tree Server. Windows to Mac to Unix, all in one package.

Paradise # F01 0131
\$850.99

www.programmersparadise.com/faircom

TX Text Control 11.0

Word Processing Components

TX Text Control is ready-to-use, robust and powerful word processing software in reusable component form.

- .NET WinForms control for VB.NET and C#
- ActiveX for VBA, Delphi, VisualScript, ASP
- File formats RTF, DOC, HTML, XML
- PDF export without additional 3rd party tools or printer drivers
- Nested tables, headers & footers, hyperlinks, indices, numbered lists, multiple undo/redo
- Ready-to-use toolbars and dialog boxes

Professional Edition
Paradise # T79 021V
\$739.99

www.programmersparadise.com/thetextsource

Multi-Edit 9.10

by Multi-Edit Software Inc.

Multi-Edit 9.10 provides a single environment to control all your VCS programs and compilers, while integrating with existing RAD environments. Easily handle large DOS/Windows, UNIX, binary, and Macintosh files in over fifty programming languages immediately out of the box. Fully customizable, Multi-Edit's sophisticated search/replace feature now includes support for Perl 5 Regular Expressions. The Evolve Xbase AddOn and Polytype code formatter are integrated into every purchased copy of Multi-Edit, absolutely free! Seamlessly integrate with TopStyle, CSE Validator, HTML Tidy, Beyond Compare and other favorite accessories.

Paradise # A30 015Y
\$208.99

www.programmersparadise.com/multiedit

Microsoft Visual Studio Tools for the Microsoft Office System

by Microsoft

Microsoft Visual Studio Tools for the Microsoft Office System provides developers the tools and technologies they need to build the next generation of solutions for the Microsoft Office System. It provides a new set of Visual Studio .NET 2003 project templates you can use to create assemblies that run in process with Microsoft Office Excel 2003 and Microsoft Office Word 2003. This enables you to create document-centric solutions that utilize the power of the hosting application, which, in this first release, includes Excel and Word.

Paradise # M47 259Y
\$466.99

www.programmersparadise.com/microsoft

Allfusion ERwin Data Modeler 4.1.4

Plus 1 Year Enterprise Maintenance

by Computer Associates

Allfusion ERwin Data Modeler enables you to visualize complex data structures, inventory information assets and establish enterprise-wide standards for managing data. It intelligently automates the design process and synchronizes the model with the database design. You can use this product to design transactional systems, data marts and data warehouses in one integrated environment.

Paradise # P26 010H
\$3,845.99

www.programmersparadise.com/oa

Paradise Picks



DevTrack 5.6

Powerful Defect and Project Tracking

by TechExcel

DevTrack, the market-leading defect and project tracking solution, comprehensively manages and automates your software development processes. DevTrack 5.6 features sophisticated workflow and process automation, seamless source code control integration with CVS, Perforce and ClearCase, robust searching, and built-in reports and analysis. Iterative administration and integration reduce the cost of deployment and maintenance.

www.programmersparadise.com/techexcel

Paradise # T34 0201
\$482.99

IP*Works! Red Carpet Subscriptions

by /n software

IP*Works! Red Carpet™ Subscriptions give you everything in one package: communications components for every major Internet protocol, SSL and SST security, S/MIME encryption, Digital Certificates, Credit Card Processing, ZIP compression, Instant Messaging, and even e-Business (EBI) transactions. NET, Java, C#, C++, Delphi, everything is included, together with per developer licensing, free quarterly updates, C# and free upgrades during the subscription term.

www.programmersparadise.com/nsoftware

Paradise # D77 0148
\$1264.99

800-445-7899 • programmersparadise.com

Prices subject to change. Not applicable for geographical areas.

SOFTWARE SECURITY SUMMIT



April 12-14, 2005

Hyatt La Jolla | San Diego, CA

www.S-3con.com

The only technical conference focused on security at the applications level

- Learn How to Build Secure Software
- Secure the Software on Your Network
- Test the Security of Your Software
- Understand Software Security Vulnerabilities
- Implement a Layered Approach to Application Security
- Architect Security Into the Development Life Cycle



Understanding the Arts Of Your Adversary

James A. Whittaker

Director of Center for Information
Assurance, Florida Institute of Technology



Why do hackers target your company, your products or your Web site? This engaging keynote explains the motivations and techniques of your adversaries and, more important, sheds light on what you can do about it. Software security expert James A. Whittaker will show actual attacks and talk broadly about the techniques hackers use against Web sites, applications and networks. He will address both basic and advanced hacker attacks from planning the hack, finding a vulnerability and finally executing the exploit. This fact-filled keynote address will set the stage for the technical classes to come, by providing a better understanding of your adversaries and how to defend against them.

Visionary Keynotes

The Case for Secure Software

Mary Ann Davidson

Chief Security Officer, Oracle Corp.



"IT" means more than information technology. It also means "infrastructure technology," as virtually all providers of critical infrastructure have an IT backbone. Your organization's IT must become as safe, secure and reliable as physical infrastructure—and that requires a cultural revolution within our profession, so that IT becomes a discipline, and a profession to the same degree as the engineering disciplines that create physical infrastructure. While the cultural revolution in security needs to be led by the IT industry's leading companies, all of us have a vital role to play in changing this important dynamic, so that security is a baseline requirement for IT products, instead of an afterthought.

Change the Security Paradigm or Bust

Amit Yoran

Former Cyber Security Chief for
Homeland Security



Over the past two decades the Internet and those participating on it have let their security rely heavily upon an internal trust model. This trust concept has led to building network security perimeters and an increasingly complex set of security products to keep miscreants out. Today's rapidly changing computer systems, distributed uses and nature of networks as platforms have led to a state of almost complete ineffectiveness of traditional security approaches. Modern computing environments include distributed users, remote code download and execution, Web services, XML, RFID, mobile digital platforms and dynamic participation on a multitude of networks.

Platinum Sponsor

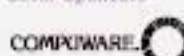


Secure Software™

Gold Sponsors

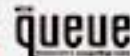
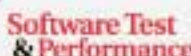


Silver Sponsors



Produced by
BZ Media

Media Sponsors



Register to attend and get more

- Write More Secure Software
- Protect the Software You Have
- Test Your Software for Security

**Over 39
Classes,
Tutorials &
Keynotes!**
www.S-3con.com



Hyatt Regency La Jolla at Aventine



Faculty Include

Allen Holub, SD Times Java Watch columnist; Author of nine programming books

David LeBlanc, Co-author of "Writing Secure Code"

Hung Nguyen, CEO, LogiGear; Author of "Testing Computer Software" and "Testing Applications on the Web"

Caleb Sima, CTO, SPI Dynamics

Kenneth van Wyk, Co-author of "Secure Coding: Principles and Practices"

John Viega, CTO, Secure Software; Author of "Building Secure Software"

**Register by
March 18
Save \$300!**



**Early Bird
Savings!**

the Software Security Summit
information today at www.S-3con.com

News Briefs

MORE UPGRADES

< continued from page 10

2.6-based PowerPC or x86 distribution to a complete CGL 2.0 distribution, and provides tools and updates to customize the system . . . InterSystems is now offering a version of its **Caché** database on Mac OS X. Caché, which the company describes as "post-relational," makes data available as both objects and tables simultaneously. The software costs US\$200 for a single-user version and about \$1,000 for a multiuser configuration . . . Version 2.13 of **ApTest Manager**, a test management system from ApTest, includes a new visual HTML editor that lets developers define tests using a word-processor-style user interface. It also lets managers assign individual test cases to specific testers, and lets customized fields be specified at test-case execution time. ApTest Manager can be licensed to run locally or used as a hosted service . . . Griffin Technologies has produced version 4.1 of **Wibu-Key**, its hardware-based software copy protection and license management system. The updated USB/parallel token now offers 16KB of memory, half of which is for application data storage, the other half of which is encrypted and used for managing end-user license keys. The new version also allows for remote updates to the key's firmware . . . Accelerated Technology is offering a version of its **Nucleus** POSIX real-time operating system kernel that is compliant with Software Communication Architecture 3.0, a set of standards for deploying software-defined radio. Licenses for the SCA-compliant kernel start at US\$2,995 per developer . . . Maguma will make the source code for **Maguma OpenStudio**, its Windows-based PHP integrated development environment, available as open-source software. The software will be available from the phpwizard.net and community.maguma.org sites . . . Seapine Software has updated its software change management system. **Surround SCM 3.1** includes new features to help graphic artists and software developers manage changes to image files. Users can switch between thumbnail views and traditional listings of source file names. They also can view the images within Surround, without launching a separate graphics application, and use a visual differencer to identify changes between image versions. Surround SCM prices start at US\$595 for a named license . . . BZ Media is increasing the frequency of its regular subscriber newsletter, **SD Times News on Monday**, to twice weekly beginning in mid-March. Watch your mailbox for **SD Times News on Thursday**.



PEOPLE

BEA has promoted **William Klein** to executive VP of business planning and development. He had been the company's CFO since 2000. The new CFO is **Mark Dentinger**, who had been senior VP of finance . . . **Greg Kostello** is the new senior VP of product management at Kintera, which helps government and nonprofit customers implement software-as-a-service. He had been EVP of technology at the MP3.com music community . . . **Matthew DiMaria** is the new VP of marketing at change-management company Serena Software. He had previously been senior VP of marketing at Everypath, a mobile applications provider . . . **Yuan Huntington** has been promoted to VP of marketing at integration firm NetManage; she had been director of product marketing. Before joining NetManage in 2004, she was VP of business development at video communications start-up Talkway



. . . CollabNet has hired **Chris Clabaugh** as VP of business development. He had been VP of application partner market development for Progress Software; he was also the founder of Allegrix, which was acquired by Progress in 2001 . . . Another VP of business development is **Roger Hodskins**, who has been hired into that role at test-tools maker Radview Software. Previously, he was VP of corporate alliances at data integration company Ascential Software . . . **Michael Ouye** has been named VP of engineering at rich-client developer Laszlo Systems. Ouye had been VP of engineering for PSS Systems, which sells software for helping companies meet legal and regulatory obligations. ■

NetManage Updates Duo of Host Access Tools

OnWeb mixes data sources, Rumba adds single sign-on

BY EDWARD J. CORREIA

With the release of OnWeb 7.2 on March 7, NetManage gives developers using the latest version of its host-to-Web tool the ability to blend their host apps with a variety of non-main-frame back-end systems, including those from Oracle, PeopleSoft, SAP and Siebel, and build composite applications that combine data from a variety of hosts and database systems.

"Now you can take transactions from the host, integrate them with data from systems like SAP, PeopleSoft and Siebel, and make them into new applications," said Yuan Huntington, vice president of marketing at NetManage. Before, OnWeb could just encapsulate host

transactions and data into Web services, .NET assemblies or J2EE objects and portlets for consumption by those systems. "But that was one-way. Now OnWeb can be used as a platform for creating composite applications."

The tool also now integrates with Microsoft's BizTalk server and supports macros for thick and thin clients. "That's an added layer of flexibility for developers to reuse integrations they created using BizTalk" and eases migration of applications to zero-footprint devices like Web terminals. "They can use the same macros and navigation keys in the HTML environment without retraining," and reduce hardware costs, she said.

NetManage also updated its

Rumba Windows-based terminal emulation environment for OS/400, Unix and VMS to version 7.4, adding single-sign-on capability across servers through support for Kerberos, increasing security by eliminating casual distribution of passwords on yellow sticky notes. "It also aids in user efficiency by requiring fewer steps to access host applications and reduces calls to help desk for forgotten passwords."

Developers also can use Rumba to track user activity across all supported hosts. "Developers now have the capability to measure and report usage patterns according to user connect/disconnect time, host address and application accessed," she said. ■

SQL Server 2005: Still Waiting

< continued from page 1

Tom Rizzo, Microsoft's director of SQL Server product management, noting that the SQL Server launch will coincide with that of Visual Studio. Beta versions of both are expected by March 31.

Formerly code-named Yukon, SQL Server 2005 has been plagued by delays and was previously promised for 2004. Its delivery is crucial not only because Microsoft has not updated its flagship database since 2000, but also because the 2005 edition will .NET-enable SQL Server—critical to increasing adoption of the company's development platform. "SQL Server 2005 is a developer release," said Rizzo. "The developer will spend a lot less time hand-coding to expose the database."

Both IBM and Oracle have released several updates to their respective databases since 2000, and both companies offer support for .NET developers who want to use DB2 or Oracle Database, instead of SQL Server. (See "Is Microsoft Oracle's New Best Friend?" page 3.)

SQL Server 2005 Enterprise edition will cost



'We have optimized the hell out of it, and you will never write a bad SQL Server query.'

—Tom Rizzo, director of SQL Server product management at Microsoft

US\$24,999 per server processor, the Standard edition will run \$5,999 per server processor, while the Workgroup edition is priced at \$3,899 per server processor. Microsoft also announced the immediate availability of a Workgroup edition of SQL Server 2000, and in conjunction with Microsoft's announcement, hardware maker Dell has said it plans to prepackage the Workgroup and Standard editions for both SQL Server 2000 and SQL Server 2005 with its PowerEdge servers.

A Microsoft spokeswoman said the price increase of the Enterprise edition reflects the addition of enhancements since SQL Server 2000 was initially released, including developer productivity tools and support for partitioning and advanced database mirroring.

Also, the price includes tools for functions such as data mining and reporting that IBM and Oracle sell as add-on modules, Rizzo said.

In addition, Microsoft has increased the capabilities of the lower-priced editions. For instance, log shipping, a feature included only in the Enterprise edition of SQL Server 2000, will be available in the 2005 Workgroup edition, Rizzo said. Log shipping eliminates the need to store backups to tape. SQL Server 2000 Enterprise capabilities, including 64-bit support, failover clustering and unlimited memory, will be included in the Standard edition of SQL Server 2005. "There is a lot of value in all the editions," said Rizzo. "We have optimized the hell out of it, and you will never write a bad SQL Server query." ■

Components by Syncfusion

For use where failure is not an option

Syncfusion Component libraries for
Windows Forms and ASP.NET – crafted with pride by people you know and trust.

**Grid, Docking, Grouping, Editors, Diagramming,
Charting, Excel reporting, PDF, HTML Display & more.**

Most component libraries work as expected during “normal use”. However, when the going gets tough, you can count on but a few. Download a free trial today and experience the Syncfusion difference.



WWW.SYNCFUSION.COM 1 888 9 DOTNET



“Can you say 4G?”

In the telecommunications business, if you're not looking ahead, you're going backwards.

That's why at Enea we're already focusing on how to evolve next-generation telecom systems and terminals.

We can help you move forward.

Just look around, you'll find Enea's OSE RTOS everywhere: in approximately half the world's base stations, in the smartest feature phones and cell phones, cutting edge automotive platforms and a full spectrum of medical and safety critical devices. Enea provides solutions so reliable they go beyond determinism.

The complexity of today's telecom systems demands the

flexible design architecture you get with a platform approach. Enea's OSE platform provides just that. Our homogeneous programming for heterogeneous environments makes it possible to dramatically cut development costs, risks and of course crucial time to market.

At Enea we think differently. We provide more than just a superior embedded real-time operating system. We bring you an entire platform that includes products and extensive professional services for developing next-generation telecom devices.

To download the Enea telecom and networking solution guide go to www.ose.com/ee-tel.

Visit Enea at the Embedded Systems Conference West San Francisco, March 8 – 10th
Stop by our booth (# 2202) and enter to win an MP3 player!

Green Hills: Two Products, Two Firsts

Company releases WiFi reference kit, universal trace probe adapter

BY EDWARD J. CORREIA

A pair of new product releases from Green Hills also represent two company firsts.

The company on March 7 began shipping a version of its SuperTrace probe that for the first time works with target designs that do not have a trace port, the specialized connector found on some hardware that allows developers to peer inside a processor's inner workings for application debugging.

Also on that date the company unveiled the WiFi Reference Design, an ARM-based development kit that it says is ready to run either its Integrity RTOS or its kernel, Velocity, for the creation of 802.11 a/b/g devices for all manner of handheld applications, including inventory tracking, telephony, and medical

and transportation equipment. The company in July will add security stacks to its Wireless Ethernet driver and IPv4 and v6 stacks that will permit the creation of stationary wireless devices, such as access points.

David Barnett, Green Hills' director of product marketing, said the company is providing the kits as a convenience, and is not getting into the hardware business. "With something like WiFi, where there are a lot of hardware dependencies, people want something that works out of the box. The reference design will allow them to start writing and adding applications right away." The boards will be manufactured by either Cogent or Embedded Planet; deals were still pending at press time. Green Hills will sell the kit for US\$1,500 plus software.

WITHOUT A TRACE

Barnett said that with the addition of the non-trace processor support, initially for PowerPC processors only, the \$9,990 SuperTrace probe will be useful to a greater number of developers than the SuperTrace alone. "[Previously], the probe was great for people with a processor with a trace port but not useful otherwise. This lets people without a trace port take advantage of trace data collection of the Probe."

Non-trace support is implemented by means of a \$2,900 adapter that connects between the processor and its bus, permitting signals to be intercepted and analyzed by a developer's own tools, or by Green Hills' \$4,900 TimeMachine debugger. "An extension to our linker analyzes binary code and adds instrumented code—a type of logging command—after each block. It monitors addresses that are being sent to by instructions."

TimeMachine presents a visual display of an application's execution history. "It lets you debug step by step backwards



An adapter for the SuperTrace probe will allow trace on non-trace processors, beginning with the PowerPC.

from bugs to find the cause," Barnett said, adding that developers already familiar with TimeMachine will have an easy time implementing instrumentation. "It's a flag you set when you link your application. There's no other change."

Barnett claimed that with its 1GB of internal memory and ability to work on binaries, the SuperTrace probe is unlike most competitors, which instrument source code and buffer into target memory. "So you're doing a post-mortem on an execution—you have to recompile. Since we instrument the binary, you don't have to recompile, and you can trace even if you no longer have access to the source." ■

A Pair of Clean-Room JVMs

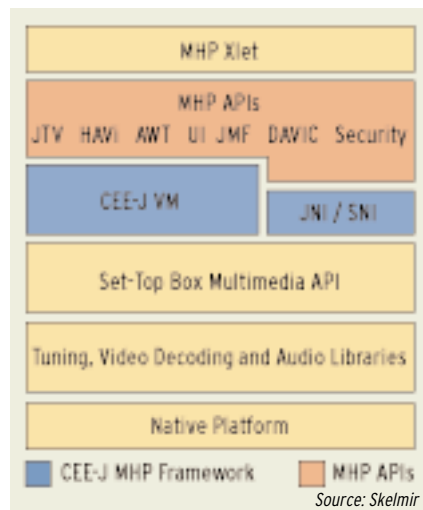
Port of CEE-J for eCosPro; Aonix boosts PERC

BY EDWARD J. CORREIA

eCosCentric, the company formed by former Red Hat developers working on the eCos RTOS, has announced a port of CEE-J, a clean-room JVM developed by Massachusetts-based Skelmir. The JVM has been certified by eCosCentric for ARM and IA32 processors running eCosPro, the company's development platform that includes an implementation of the eCos open-source RTOS, RedBoot bootstrap firmware and Eclipse-based IDE.

According to the company, eCosPro is finding its way mainly into building automation and industrial control systems as well as consumer devices. The CEE-J virtual machine is suited to digital televisions, onboard navigation systems, Internet appliances and various handheld and wireless devices. It supports MIDP (midlet) execution, and hosting of applications built for the multimedia home platform (MHP), a specification that defines standards for the delivery of digital television and data being developed by the DVB Project (dvb.org), an international consortium of broadcasters, manufacturers, network operators and software developers.

CEE-J also adds JDWP, an extension of Sun's Java Platform Debugger Architecture that permits fine-grained control and debugging of remote applications from within major IDEs, including CodeWarrior, JBuilder and Sun's command-line debugger. Also supported is the Open Services Gateway Initiative (OSGi), an application framework that enables the delivery and sharing of back-end applications and services through a common network.



The multimedia home platform specification defines how digital content can be delivered.

BREWING AT AONIX

Java developer Aonix in late February released PERC 4.2, the latest version of its Java development environment and clean-room JVM for mission-critical applications, claiming a performance increase over predecessors of about 20 percent for most applications, and as much as 50 percent for others.

The Nuremberg, Germany-based company also claims that the US\$2,999 solution, which runs on Linux, Solaris and Windows development hosts, now provides JDK 1.4-compatible libraries for nongraphical applications, and implements AWT graphics libraries through the GNU classpath, in addition to its existing SWT support.

PERC targets Linux, Windows and major commercial RTOSes, including LynxOS, QNX and VxWorks running on ARM, PowerPC, x86 and XScale. ■

What's your PDF?



Precise Document Formatting

With activePDF Server™, you gain full control over your PDF output with conversion options that allow you to specify page size, compression and resolution options, embed text, create bookmarks, concatenate to existing files, and more. Licensed per server, you can easily add PDF generation to virtually any Windows application.



Populate Dynamic Forms

With activePDF Toolkit™'s form-filling capabilities, you can dynamically populate PDF forms with data and images from a database, allow users using only Adobe Reader to fill-in and save forms and use PDF forms as document templates to precisely control image placement and resizing. With Toolkit's robust API, the automation of virtually any PDF manipulation task becomes possible - append, stamp, stitch, merge, print, secure PDF and more.



Promote Digital Fidelity

Do you need to standardize PDF output within your enterprise? With DocConverter™, you can easily use built-in support for "watched" folders to implement server-side PDF generation in a matter of minutes, with full control over the PDF output at the server level. Or, use DocConverter's programmable COM object to integrate convert-to-PDF functionality within your enterprise application.



Present Data Fashionably

Ensuring precise layout of an HTML document can be a nightmare, especially when printing. PDF guarantees pixel-perfect layout every time as what you see is what you print. With activePDF WebGrabber™, you can dynamically convert any URL, HTML stream, or HTML file to PDF on the fly, while maintaining embedded styles.

Download your free trial version today at www.activePDF.com

Copyright © 2004, activePDF, Inc. All Rights Reserved. "activePDF", "Leading the Paper Revolution" and the activePDF logo are registered trademarks of activePDF, Inc. All activePDF product names are trademarks of activePDF, Inc.





Soar over your competition with the INTEGRITY® RTOS

While your competitors waddle about with Linux, fly past them with the INTEGRITY® real-time operating system from Green Hills Software—the only RTOS designed specifically for 21st century embedded applications.

Maximum performance

- True real-time performance with response times hundreds of times faster than Linux
- The fastest compiled code—semiconductor manufacturers choose our compilers 3x more often than GNU for benchmarks

The lowest manufacturing cost

- A footprint as small as 3 KB of RAM—hundreds of times less than Linux
- The most compact compiled code—Green Hills® compilers even reduce the size of Linux by 35% compared to GNU

Total reliability & absolute security

- Secure partitioning with guaranteed resource availability that thwarts denial-of-service attacks, hackers, and Trojan horses
- Bulletproof reliability—proven in safety-critical and flight-critical avionics systems deployed today

The fastest time-to-market

- The only POSIX® 2003 certified RTOS (even fork and exec)—maximizing source code portability
- Instant bring-up on new hardware, with or without a BSP
- Support from the original developers—for the fastest and most informed response

And with the INTEGRITY RTOS, you get all you expect from a modern operating system:

- ✓ **Royalty-free**
- ✓ Memory protection
- ✓ Over 100 device drivers and BSPs
- ✓ IPv4, IPv6, IPsec, SSL and more
- ✓ Broad processor support
- ✓ Source code available
- ✓ A complete and tightly integrated development environment

Choose the INTEGRITY RTOS and soar over your competition by getting your electronic products to market first at the lowest cost—with the utmost performance, reliability, and security. Call us today to learn how easy it is to get started.



www.ghs.com/soar

805-965-6044 x201

Where Are the Brains In Your Embedded Development Organization?

BY EDWARD J. CORREIA

Enterprise embedded development encompasses a tremendous range of scope. Many people have seen the handheld package trackers used by shipping companies, and can imagine how embedded software runs within large defense projects—but how about probing the inside of the human brain?

When developers at the National Institutes of Health (NIH) build a probe to monitor individual neurons inside the human brain, their applications need to run on a system with sufficient response time to keep up. And not just any development platform will do.

"Windows is not that good a real-time operating system," asserted Art Hays, who develops the internals for data acquisition and control software at NIH, the self-proclaimed steward of this nation's medical and behavioral research. "I am responsible for the real-time architecture, for the way the data moves off probes and writing to disk."

Interestingly, NIH was still using machines introduced decades earlier by Digital Equipment Corp. as recently as 12 years ago. "This system's been in development for over 25 years. It started out on PDP-11s running a real-time Unix that we had to write ourselves," said Hays. "But when considering possible migration targets, 'we need better [response time] than Windows.'"

Also considered were pSOS and VRTX real-time operating systems, which Hays said met NIH's real-time needs but were ruled out for other reasons. "Since we were coming from Unix, pSOS and VRTX would have required tremendous restructuring." Another requirement was that the operating system run on hardware that was widely available commercially. The organization chose QNX Neutrino. "QNX gave us the same real-time we had written into the Unix kernel, yet it runs on PCs," so the development host can be identical to the target, a time-saver for development, debugging and deployment.

The migration was completed in 1993.



And while QNX's tools have since evolved to include an Eclipse-based IDE and the Photon GUI environment, Hays uses JED, a text-based editor for MS-DOS, QNX, Unix, Windows and others.

John McClurkin, information technology specialist and software programmer at NIH, also swears by his text-based editor, though a different one than his colleague's. "I'll build under Visual Studio but do the editing with XEmacs," he said of the GNU editor, "because XEmacs is the best code editor there is, and I know all the keystrokes." He added that graphical environments such as those under Windows are too mouse-oriented, and force him to switch back and forth.

McClurkin, who counts among his achievements a real-time system to analyze how the brain processes visual stimuli, also uses the Eclipse-based tools, but on his own terms. "Their editor can emulate Emacs keystrokes. You can't define your own key bindings, but it gives you the standard ones, so it's not too bad." The environment also supports context-sensitive text coloring, which he considers very important.

BEWARE THE IDES

According to McClurkin, the structure imposed by integrated development

environments is not compatible with his work style. "When I'm working, I have files and windows open all over the place overlying each other. I can move the cursor into a partially exposed window and type into it while looking at something else, even if it's not on top. You can't do that with an IDE; they were designed by anal-retentive thinko-computer scientists, who want everything precisely laid out with no overlap."

However, McClurkin did admit to occasional use of an IDE. "In some cases I need to do some debugging or backtracing or single-stepping. And I use Eclipse mainly for debugging. In Linux, I use [Etnus] TotalView, which is purely a debugger." For building his graphical user interfaces, McClurkin uses either BXPPro or QNX's Photon Application Builder (PhAB). "When I'm in Linux, I can have BXPPro running, call up and edit a file in XEmacs, and launch TotalView. I have all the pieces of an IDE without actually having one."

Taking a more favorable view of IDEs is Dan Michaels, senior architect/developer with Bekins Van Lines, which offers residential and industrial moving and logistical planning services. Michaels has experience with several IDEs, including JDeveloper, JBuilder and Visual Studio.

To build the company's first wireless application, Bekins first tried a middle-ware-based solution, which failed. "The middleware was to send data from DB2 to the handhelds and back again and sync everything." But, Michaels said, the solution relied too heavily on the middleware, and required too much maintenance. "We would've had to have someone monitoring and updating it [full-time] because it was so complex and time-consuming. It was also like a backbone, so if it went down nobody could do anything."

On his second attempt, Michaels switched to a client/server model. "That got rid of the middle tier that was causing all the problems," and enabled real-time transactions and data to and from the handhelds. The device footprint and wireless data payload also were smaller. "The middleware had to send a lot of data on top of your data just to talk with its master," said Michaels. "Not only are we not doing all that, we are also able to send just the columns we are updating. Our handhelds go over cellular connections, so the more data in the stream, the more we pay."

Michaels is currently using WebSphere Studio Device Designer (WSDD),

► continued on page 26

Where Are the Brains in Your Development

◀ continued from page 25

IBM's Eclipse-based Java environment. He's targeting Intermec series 700 devices running Pocket PC for an object-tracking system that he said is similar to those used by FedEx and UPS. "You scan the things you're giving the person, and

they can see what they're signing for and note any damage," Michaels said. The system also can track vehicle location, he said, and will eventually give customers the ability to keep apprised of delivery status through a Web interface.

Of the IDEs he has used, Michaels

spoke most highly of his current environment. "Eclipse is great. It makes it easy to go through and find things in your code." He did have one or two reservations about IBM's WSDD debugger, however. "It's a bit buggy: It won't return line numbers from stack traces and sometimes

won't step through lines."

To help with user interface design, Michaels uses Jigloo, an Eclipse plug-in from Cloud Garden. "That lets us quickly create SWT screens with a visual representation of what the handheld looks like, so you can place screen elements." For greater speed and code efficiency, Michaels again departed from IBM's approach, which included Java's Abstract Windowing Toolkit. "AWT uses more code and is slower. SWT has a smaller footprint, so when you're coding you don't have all the extra classes that a regular JDK would have." Michaels admitted that he was a bit surprised by IBM's push toward tools with a bigger footprint. "For embedded [development] you want to use the smallest, fastest thing available."

To deal with intermittent connectivity of cellular networks, Michaels created a background process on the device that saves changes locally in the absence of a connection. "We have a database that [senses when] a transaction didn't go up or an error happened and will try again when there's a signal. The user is oblivious."

That left Michaels with just one more problem to solve: communication between field applications running on IBM's J9 VM and Bekins' back-end mainframes running DB2. "We didn't find anyone who said their drivers would work

TOOLS OF THE TRADE

Developers interviewed for this story use a variety of development tools, ranging from text-based editors with versions that run under DOS to cutting edge modeling tools that use the latest release of the Unified Modeling Language. Here is a list of all the tools mentioned in this story, along with their function, vendor and Web site.

| TOOL | VENDOR | TOOL TYPE | LANGUAGE(S) | HOST PLATFORM(S) | WEB SITE |
|-----------------------------------|-----------------|----------------------|--|---------------------------------|--|
| BXPro | IceWalkers | GUI builder | Java | Linux, Unix | www.icewalkers.com/Linux/Software/510150/Builder-Xcessory-PRO-(BXPRO).html |
| ClearCase | IBM Rational | req/change mgmt | any | Linux, Unix, Windows, z/OS | www.ibm.com/software/awdtools/clearcase |
| Eclipse | Eclipse.org | IDE Framework | Java, C/C++ | Linux, QNX, Unix, Windows | www.eclipse.org |
| JED | Jedsoft | Text editor | C, C++, Fortran, HTML, Python, TeX, others | MS-DOS, QNX, Unix, VMS, Windows | www.jedsoft.org/jed |
| Jigloo | Cloud Garden | SWT GUI builder | Java | Eclipse plug-in | www.cloudgarden.com/jigloo |
| Multi | Green Hills | IDE | Ada, C/C++, Fortran | Linux, Unix, Windows | www.ghs.com/products/MULTI_IDE.html |
| PC Lint, Insure | (various) | Static code analyzer | Ada, C/C++, Fortran, Java | Linux, Unix, Windows | (various) |
| Photon Application Builder (PhAB) | QNX | GUI builder | multiple output | QNX, Windows | www.qnx.com/products/development/app_builder.html |
| Rhapsody | I-Logix | UML modeling tool | Ada, C, C++ | Linux, Unix, Windows | www.ilogix.com/rhapsody/rhapsody.cfm |
| System Architect | Popkin Software | Enterprise modeling | multiple output | Windows | www.popkin.com |
| TotalView | Etnus | Debugger | C/C++, Fortran | Linux, Unix | www.etnus.com/TotalView |
| Visual Studio | Microsoft | IDE | C/C++, C#, VB | Windows | msdn.microsoft.com/vstudio |
| WebSphere Studio Device Designer | IBM | IDE | J2ME | Linux, Windows | www-306.ibm.com/software/wireless/wsdd |
| XEmacs | GNU | Text editor | C, C++, Fortran, HTML, Python, TeX, others | Linux, Unix, Windows | www.xemacs.org |



PEG[®] the leading GUI for Embedded Systems

- PEG+ - Full Featured Windowing in C++
- C/PEG - Smallest Footprint in ANSI C
- Royalty Free
- Fast execution speed
- Completely ROMable
- Delivered with Full Source Code
- Development Tools including: FontCapture, PEG WindowBuilder, and ImageConvert
- Complete set of screen drivers included
- Completely customizable
- Industry leading RTOS Support
- Supports all popular target processors, video controllers and I/O devices
- Multi-lingual support - 2-byte character sets & UNICODE string encoding
- Event-driven programming model
- Application Design Services
- Knowledgeable and timely support to users around the globe

SWELL software
GRAPHICS SOFTWARE FOR EMBEDDED SYSTEMS
WWW.SWELLSOFTWARE.COM 810-983-5955



4 out of 5 of Fortune Magazine's most profitable companies purchased dtSearch developer or multi-user licenses in the past two years.

dtSearch[®] Instantly Search Gigabytes of Text Across a PC, Network, Intranet or Internet

Publish Large Document Collections to the Web or to CD/DVD

- over two dozen indexed, unindexed, fielded & full-text search options
- highlights hits in HTML, XML, & PDF while displaying embedded links, formatting & images
- converts other file types (word processor, database, spreadsheet, email, ZIP, Unicode, etc.) to HTML for display with highlighted hits

dtSearch Reviews...

- "The most powerful document search tool on the market" - *Wired Magazine*
- "Intuitive and austere ... a superb search tool" - *PC World*
- "Blindingly fast" - *Computer Forensics: Incident Response Essentials*
- "A powerful arsenal of search tools" - *The New York Times*
- "Covers all data sources ... powerful Web-based engines" - *OWEEK*
- "Searches at blazing speeds" - *Computer Reseller News Test Center*

The Smart Choice for Text Retrieval[®] since 1991

1-800-IT-FINDS
sales@dtsearch.com

See www.dtsearch.com for:
• hundreds of developer case studies & reviews
• fully-functional evaluations

Group?

with J9. We figured out a way to make IBM's driver work, but it needed a recompile of J9, and IBM wanted money for that."

Addressing that precise niche is DataDirect, which implements JDBC-to-DB2 functionality in Java. "A tiny jar file is added to a classpath. J9 didn't have all the classes that the DataDirect driver needed, but all we had to do was have an accompanying jar with it and it works perfectly," said Michaels. No additional main-frame software was required.

CLOSED TO OPEN SOURCE

Bob Green does not have such luxuries of choice. As software engineering process and improvement manager at L-3, a defense contract developer, he is told by the customer which development tools are acceptable for a given project and which are not.

He, in turn, recommends to L-3's developers which tools are to be used for each development contract. "We have an approved list of tools. As new projects come in, I look at what applications they are and what languages they're using. Based on the criteria I'm given, and unless the customer specifically recommends something different, I authorize which tools you're allowed to use and which ones you're not." Criteria might include compliance with POSIX standards or with DO178B or EAL Common Criteria security standards, he said.

L-3 develops secure communications systems for the government; the Joint Strike Fighter jet is among its current projects. "We make secure communications between man and ground, ship to ship, man and satellite; anywhere secure communications is required, we have equipment," said Green.

Consistent with most embedded requirements, code efficiency and execution speed are important factors. "We usually target a single-board computer. We have tools for optimizing, and we look at the design architecture and recommend that if the architecture for that application is not efficient. The more efficient the architecture, the less skill is required to support it." He said I-Logix's Rhapsody and Popkin Software's System Architect modeling tools are helpful for

generating efficient code from design patterns.

To further optimize code and identify errors, L-3 performs static code analysis using PC Lint or Insure. IBM Rational's ClearCase is used for change and requirements management. Another part of Green's job is to ensure that the

tools he's recommending interoperate with one another. "So if we have a modeling tool, it needs to play with the requirements management tool, which needs to play with the CM tool, which needs to play with the editors and the operating system we're using. So we have to be careful because certain ver-

sions of tools only work with certain other versions of tools. So we work all that out before we release tool [recommendations] to our projects."

Green said that while Red Hat Linux and other open-source tools are used occasionally for internal research and development, use of such tools

is forbidden on most projects. "Some of our customers don't want us to use open-system tools. They have to specifically say yes or no that they'll be allowed on their program, and we don't ask why. They're paying the bills, so until they give us the opportunity to explore those, we leave them alone." ■

Your embedded database should work quietly behind the scene.



Not create one.

RAIMA databases from Birdstep Technology offer an unmatched combination of speed, reliability and compatibility, as well as zero administration in mission critical environments.

The Name You Know... The Technology You Want

birdstep
TECHNOLOGY

If it's fast - it's
RAIMA

For more information call 1-800-462-2472
or download a free evaluation today at:
www.birdstep.com

EDITORIAL

Sending a Message

There's the Microsoft world, and the rest of the world. The Microsoft world is focused on a relatively closed ecosystem, consisting of a base operating system (Windows), managed runtime environment (.NET), application server (IIS), relational database (SQL Server), integration server (BizTalk), rich client (Office), Web browser (Internet Explorer) and tools (Visual Studio).

Microsoft wants you to base your solutions on its technologies, and those of its partners. It doesn't want you to use competing technologies or products.

You can build and deploy a full enterprise using only software from Microsoft, from the handheld to the desktop to the server. With its moves into accounting, portals, speech and storage, Microsoft is continuing to demonstrate that its universe is virtually self-contained. While partner solutions are obviously critical to the Microsoft ecosystem, the focus is on Microsoft alone.

From that perspective, Microsoft is no different from the other full-service platform providers, such as Apple, IBM, Novell and Sun. They, too, like to demonstrate that you can base your entire enterprise operations on their software.

Microsoft's technology has long been perceived as a closed environment. Through the use of undocumented functional calls, proprietary communications protocols and file formats, creative interpretations of industry standards and oft-changing APIs, Microsoft has mastered the art of locking out its competitors, and controlling the effective scope of its partners.

Here, too, Microsoft is essentially like many of its platform competitors. For most of its history, Big Blue was synonymous with closed environments—and it took the courts to open the mainframe and midrange systems to PCMs, the plug-compatible manufacturers. Back in the 1980s, there was nothing open about NetWare, and the Mac was inscrutable until the release of the Unix-based Mac OS X. Yet all of those companies eventually began to open up their platforms—not completely, but inexorably.

How about Redmond? After years of grudging lip service to "industry standards," Microsoft is taking the first tentative steps toward opening up its platform. The Microsoft hype machine has run far ahead of measurable results: Bill Gates' letter proclaiming that it has solved its interoperability problems is a fascinating study in spin. Yet behind that public statement—and Gates' apparent need to send that message to customers and potential customers—may lie the germ of an emerging paradigm shift.

Has Microsoft solved all its interoperability problems? Of course not, and frankly, we don't expect the company to abandon all of its proprietary ways anytime soon—if ever. But is it making progress? Yes. Web services are one catalyst for that change: Customers won't stand for the same problems that Web developers saw with, say, Microsoft's implementations of dynamic HTML.

The Microsoft world still stands alone from the rest of the enterprise software platform space. The company's attempts to tell Web developers that they should build sites with special features that leverage "smart clients"—Windows boxes running Office—demonstrate that Microsoft still wants to own the whole pie. But to the extent that Microsoft is solving its fundamental communications problems, we applaud its newfound commitment to interoperability. Despite the spin. ■

Is Software Engineering an Oxymoron?

There has been a lot said about education on these pages in the past few weeks. Nonetheless, I want to worry this issue a bit more before going back to the mundane topics I'm supposed to be writing about, like Java. I believe there's an underlying issue that is really at the root of the matter: The nature of computer programming has changed radically in the past 30 years, but our definition of computer science has not. Consequently, we're approaching the subject in a way that's simply incorrect.

Computer science started out as a kind of mathematics. Computers were little more than glorified adding machines intended to ease the drudge work associated with solving some classes of mathematical problems. The task of programming a computer was little more than presenting an algorithm to the machine so that it could crunch numbers.

Computer science departments, then, sprung from the math departments, like Athena from the head of Zeus, fully armed. Computer science is still sometimes defined as that branch of mathematics that concerns itself with the analysis of computer programs. This topic is interesting but has little relevance when it comes to actually creating computer programs.

Computers are good at

solving mathematical problems of course, but the vast majority of programs have little or nothing to do with algorithms and number-crunching. Consequently, training in mathematics is of little or no value when it comes to writing good computer programs. If it were, then mathematicians and physicists would be brilliant programmers. The reality is that this group tends to write miserable code that's focused too much on algorithms and too little on structure.

In fact, computer science is neither a science nor an engineering discipline. Science concerns itself with the formulation and proof of hypotheses. Programmers just don't do that. Similarly, all engineering disciplines except software engineering concern themselves primarily with the mathematical analysis of structures, be they physical structures or electronic circuits. Programmers don't do that, either.

Indeed, "software engineering" books don't talk about engineering at all, at least not in the way that mechanical or electrical engineering books cover their subjects. Software engineering is about process, not structural

analysis. The closest thing that software engineering has to real engineering is the study of design patterns, but even these are nebulous. There is no single "correct" structure for the realization of a design pattern. Even calling the creation of software "engineering" is a misnomer in my mind.

As an aside, this is why I believe that it's not possible to certify software engineers. You can test structural engineers, for example, by presenting them

with a structure and having them tell you if it's going to fall down or not. There's a provable right answer and a wrong answer. You can't do this with software, though. There's no right design and wrong design—just different designs. The only definition of "good" is "I agree with the test writer," but certification has to be based on an absolute standard of correctness. There is no such thing in the world of software design, however.

So if programming isn't science or engineering, what is it? It's a liberal art. Modern programming bears more similarity to creative writing than to engineering or physics. The design process that you go through (or at least should go

Java Watch



Letters to the Editor

COMPONENT 'MISPERCEPTIONS'

On behalf of the board of directors of the Component Vendor Consortium, I am writing to express our deep concern regarding any potential misperceptions that may have been caused by the article "Why Aren't Developers Buying Into Third-Party Components?" [Feb. 1, page 23]. The title of the article alone would indicate a conclusion that is profoundly untrue. While the article generally favors the use of third-party components, the content seems based on the opinions of a few individuals rather than a broad representation of the development community at large.

In fact, according to your own research, 77.4 percent of

SD Times readers already use components today or plan to do so in the near future. Clearly, the overwhelming majority of your readers benefit on a daily basis from the enormous gains in productivity and time-to-market realized through component-based development. It is unfortunate that the author failed to cite this research, since it is very germane to the topic.

The Component Vendor Consortium (CVC), at www.components.org, is a trade association of component vendors dedicated to advancing the use of components in software development. In the past three years our membership has increased 250 percent, a testament to the success of our

industry. We look forward to more consistent and in-depth coverage of component-based development in future editions of SD Times.

Mike Sax

Chairman, Component Vendor Consortium

Editor's note: Mike Sax is also president and founder of Sax.net, which makes serial/modem communications, bar code, scripting and productivity components for Windows and .NET.

SCRUM-TIOUS

In the Feb. 1 edition of SD Times, your editorial ["Evaluating Agility," page 28] indicated that Extreme Programming was the first formalized Agile process. This is definitely not the case.

through) to create a program is almost identical to the process that you use to write a book: research, formulating a thesis (or problem definition), an orderly exposition of the thesis. These steps are central to both expository writing and object-oriented analysis and design.

UML diagrams are really an application of symbolic linguistics. They diagram the structure of the problem statement and use cases in the same way that a sentence diagram illustrates the structure of a sentence. The best training for doing this sort of design work (and for creating the code that these designs specify) is the study of languages and writing.

We should really give up on the notion of math being the foundation of computer science, drop hard-core mathematics from the curriculum, and replace it with English composition (which teaches you how to write large, complex, documents like computer programs) and Latin (which teaches you how to analyze complex linguistic systems).

Bear in mind that logic—the one “mathematical” subject that is inarguably part of programming—is traditionally taught by the philosophy, not the math, department. As an added benefit, if programmers were trained as writers, they’d be able to write coherent documentation and put meaningful comments in their code.

The mathematics that is

In 1993, I conceived and implemented the Scrum process at Easel Corp. with the help of Jeff McKenna and John Scumniotales. In 1995, Ken Schwaber began using the process throughout the software industry and was generating publicity about Scrum in analyst publications. In the same year, Kent Beck contacted me and said he was working on a new development process and wanted to use as much information from Scrum as possible (I still have the original e-mail). I sent him all the documentation on Scrum at that time.

Scrum used all the XP principles in 1993. The engineering practices were not formalized as requirements of Scrum, as we wanted an easy process for empowering small teams that could be implemented in two

Could You Make More Money By Heading Northeast?

DATA WATCH

Salaries for software developers and analysts living in the New York metropolitan area are the highest for their positions in the United States, and account in large part for the Northeast’s topping the national average, according to Salary Survey 2004, published by Enterprise Systems, an online publication for the mainframe and server market.

System programmers and analysts in the New York area earn about US\$74,000 on average, and administrators pull down \$79,000, both the highest in their field, the study showed.

What’s more, companies in the New York metro area pay upper IT management an average of \$124,000 per year, the fourth-highest salaries of the 12 metropolitan areas examined. Other areas examined included Dallas and Houston, where top IT salaries were higher, and Atlanta and Miami, where they were lower. Middle management positions in the New York area command \$80,700, good enough for fifth place nationally.

The survey also showed that the Northeast region, which includes Boston, Philadelphia and Washington, D.C., paid salaries above the national average for most positions, particularly for administrators in the Boston area.

| | Northeast | Southeast | Midwest | West | National Avg. |
|-------------------|-----------|-----------|---------|------|---------------|
| App Dev Manager | 89.9 | 87.3 | 84.1 | 91.5 | 88.2 |
| App Programmer | 53.7 | 55.4 | 52.7 | 52.8 | 53.7 |
| System Analyst | 76.6 | 67.7 | 73.2 | 70.4 | 72.0 |
| System Programmer | 75.9 | 68.0 | 76.6 | 70.0 | 72.6 |

Salaries in thousands of US dollars

Source: Enterprise Systems
www.esj.com

actually relevant—a bit of set theory and the like—is easily covered in a one-semester class on the order of the Math-for-English-Majors classes offered by most universities.

The problem, then, is that programming has changed from the study and implementation of algorithms to the study and creation of complex documents. It’s moved from math to English. It’s about time that our

educational system moved in the same direction. ■

Allen Holub is an architect, consultant and instructor in C/C++, Java and OO Design. Reach him at www.holub.com.

practices for development. This is a result of the first Scrum using XP practices and the fact that XP was conceived with full knowledge of the details and the value of the Scrum process.

Jeff Sutherland

Certified ScrumMaster
Practitioner and Inventor of the Scrum Process
jeffsutherland.com/scrum

IN-HOUSE TRAINING

I agree with the column “Teach Your Programmers Well” [Jan. 15, page 29]. Although formal training is great if it is timely, the best way to learn is from experienced software developers within your own company. When new people are hired in, they should be teamed up with those people so that they learn how to develop software the

correct way.

Tuyet-Hanh Schnell

CORRECTION

Instantiations acquired the technology that became the basis for SWT Designer from an independent author. The Feb. 15 Special Report on Eclipse incorrectly described Instantiations’ relationship with SWT.

WHAT DO YOU THINK?

SD Times welcomes feedback. Letters should include the writer’s name, company affiliation and contact information. Letters become the property of BZ Media and may be edited for space and style.

Send your thoughts to feedback@bzmedia.com, or fax to +1-631-421-4045. Please mark all correspondence as Letters to the Editor.

SDTimes

Software Development Times
March 15, 2005 – Issue No. 122

Publisher

Ted Bahr

+1-631-421-4158 x101 • ted@bzmedia.com

Editor-in-Chief

Alan Zeichick

+1-650-359-4763 • alan@bzmedia.com

Editor

David Rubinstein

+1-631-421-4158 x105 • drubinstein@bzmedia.com

Senior Editors

Edward J. Correia

+1-631-421-4158 x100 • ecorreia@bzmedia.com

Jennifer deJong

jdejong@bzmedia.com

Associate Editor

Yvonne L. Lee

+1-408-255-1153 • yilee@bzmedia.com

Copy Chief

Patricia Sarica

psarica@bzmedia.com

Art Director

Mara Leonardi

mleonardi@bzmedia.com

Art/Production Specialist

LuAnn T. Palazzo

lpalazzo@bzmedia.com

Columnists

Andrew Binstock

abinstock@pacificdataworks.com

Allen Holub

allen@holub.com

Larry O'Brien

lobrien@knowing.net

Contributing Writers

Alyson Behr

Shari L. Gould

Lisa Morgan

Esther Schindler

Susan Levi Wallach

Advertising Sales

Southwest U.S.

Julie Fountain

+1-831-476-1716 • jfountain@bzmedia.com

Northwest U.S./Canada

Paula F. Miller

+1-925-831-3803 • pmiller@bzmedia.com

Southeast U.S./Europe

Jonathan Sawyer

+1-603-924-4489 • jsawyer@bzmedia.com

Northeast/North Central U.S./Canada

Charlie Shively

+1-508-893-0736 • cshively@bzmedia.com

Advertising Traffic

Phyllis Oakes

+1-631-421-4158 x115 • poakes@bzmedia.com

Director of Events

Donna Esposito

+1-415-785-3419 • desposito@bzmedia.com

Director of Circulation & Manufacturing

Rebecca Pappas

+1-631-421-4158 x103 • rpappas@bzmedia.com

Office Manager/Marketing

Cathy Zimmermann

+1-631-421-4158 x108 • czimmermann@bzmedia.com

Customer Service/Subscriptions

+1-866-254-0110 • service@bzmedia.com

Accounting

Viena Isaray

accounting@bzmedia.com

Article Reprints

Lisa Abelson • Lisa Abelson & Co.

+1-516-379-7097 • fax +1-516-379-3603

labelson@optonline.net

BZ Media



President

Ted Bahr

Executive Vice President

Alan Zeichick

BZ Media LLC

7 High Street, Suite 407

Huntington, NY 11743

+1-631-421-4158 • fax +1-631-421-4045

www.bzmedia.com • info@bzmedia.com

JUST YOU AND 1,600,000 OF YOUR CLOSEST FRIENDS

www.codeproject.com



The Code Project has everything you need to migrate to Visual Studio .NET 2003. Visit www.codeproject.com and find out why we're your Visual Studio .NET 2003 Homepage. **The Code Project, the smart site.**

premium sponsors:



Microsoft's Smart Client Move

If you want to chill a meeting with Microsoft, ask them if the current push toward smart clients is Redmond's response to the success of the open-source Firefox browser.

There are some things Microsoft doesn't kid about, and market share is at the top of the list. According to John Montgomery, director of product management in Microsoft's Developer Division, the Internet Explorer team will do just fine responding to Firefox on their own, thank you very much (the announcement of a mid-2005 beta of IE7 came a few days after I talked to him at the VSLive conference).

Smart clients just represent the logical evolution of Microsoft's long-standing belief that users deserve the richest experience possible. It's hard to argue with the sentiment, even if you properly interpret Microsoft's idea of "richest experience possible" to mean "richest experience possible using Windows."

Upon learning .NET after half a decade or so immersed in Java and browser-based clients, I literally felt shameful for having subjected users to the limited interfaces my teams and I had produced with those tools.

Not surprisingly, we had fallen far short of the wizardry exhibited by

Google in Gmail and Google Maps, two applications whose relative pizzazz speaks volumes to the different standards used to judge stand-alone and browser-based apps. The user interfaces of both these applications are so good they almost achieve parity with stand-alone applications. To accomplish this, the Web pages rely on what is essentially an embedded UI engine written in JavaScript, allowing such things as rapid client-side sorting.

While I actually think JavaScript would make an excellent teaching language, I've yet to be part of a team that uses JavaScript with professional discipline. I'm not saying it's impossible, nor am I dodging blame for not imposing such discipline myself, but my experience with JavaScript is that it has a remarkably kudzu-like ability to get out of control, escaping from include files, reproducing wildly and becoming a generally impenetrable barrier of loosely typed functionality.

Therefore, my reaction to Microsoft's current advocacy of native clients is "You had me at 'embedded UI engine in JavaScript.'" There are certain program-

ming feats I can admire while having no desire to emulate.

Also, no amount of JavaScript can help you plan driving routes when you're on the plane to your destination, although for business travelers the area outside the lily pads of WiFi shrinks every day. Incidentally, are you looking forward with as much anticipation as I to the day when the guy in front of you can not only lower his seatback into your lap five minutes into the flight, but can do so while beginning a six-hour conversation on his cell phone or VoIP connection?

Aside from the interface, the other two key components to smart clients are the ability to work with intermittent network connections and simplified deployment. Intel has been pushing these issues for some time, using their preferred term of "mobilized software." (Full disclosure: I developed some of the sample code and white papers on this subject for Intel's Web site.)

The challenge for Microsoft in selling the smart client vision is that they are fighting not a technological battle, but a marketing one. Although ClickOnce

deployment is an important step forward, stand-alone applications will inevitably be subject to more rigorous security policies even when their required permissions are minimal. Meanwhile, hosting an application in a browser is seen as somehow magically reducing training and support costs.

The Visual Studio 2005 release of Windows Forms has some nice new controls, but it's nothing compared with the vast leap over MFC that Windows Forms 1.0 represented. Meanwhile, ASP.NET 2.0 brings some of the client-side JavaScript magic to the party, potentially making the smart client decision even harder.

Whether Microsoft can succeed in making smart clients fashionable, I don't know, but I do think that they're significantly easier to program than complex browser-based UIs. In the world of corporate development, nothing matters more than rapidly developing client value, and the time is past when we should assume that putting an application in a browser automatically makes it easier to use and more universally appealing.

Simplicity in UI design is a good thing, but when an application goes beyond a relatively straightforward set of text, forms, images and tables, keeping the UI in the browser is counterproductive. ■

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.

Windows & .NET Watch



Larry O'Brien

ON TIME & ON BUDGET don't happen on the learning curve.

CALL US TODAY about your current project.
We can help you match application technologies
with required developer skills and develop a
curriculum that will prepare your team.

Understanding a new technology is a big challenge to new software projects. Your results depend on how well your developers can exploit its capabilities, avoid its weaknesses and most efficiently build the application.

That's where we can help. DevelopMentor is the industry's most technically respected training. Our hands-on courses, taught by the industry's best instructors, combine a thorough understanding of the technology with useful best practices.

YOU CAN'T WRITE SOFTWARE BETTER THAN YOU UNDERSTAND IT.

.NET J2EE INTEROP
SECURITY ARCHITECTURE
MOBILE APPS C# Java
VB.NET C++

www.develop.com

Our complete developer curriculum is available online with public course dates. All courses can be configured to match the needs of your team for delivery on-site.

IN THE US
800
699.1932

WITHIN THE UK
08000
562.265

WITHIN EUROPE
+44.1242
525.108



developmentor

LOS ANGELES, CA • BOSTON, MA • LONDON, UK
BIRMINGHAM, UK • CHICAGO, IL • NEW YORK, NY • SEATTLE, WA • ATLANTA, GA
CHARLOTTE, NC • COLUMBIA, MD • COLUMBUS, OH • DALLAS, TX • MADISON, WI
PORTLAND, OR • AUSTIN, TX • SAN DIEGO, CA • SAN FRANCISCO, CA • TAMPA, FL

THE WORLD'S LARGEST SOFTWARE TESTING EVENT

**STAR
EAST
2005**



INTERNATIONAL CONFERENCE ON
**SOFTWARE TESTING
ANALYSIS & REVIEW**

- **18 IN-DEPTH TUTORIALS** structured in a daylong workshop format to provide practical, hands-on information about specific testing issues and challenges
- **6 KEYNOTE SESSIONS** given by international industry experts from a range of backgrounds on a variety of testing topics
- **42 CONCURRENT SESSIONS** packed with information covering critical testing issues giving new real-world approaches to solving them for the beginner to advanced testing professional
- **EXPO EVENT** provides the latest tools, products, and services from leading testing software and service vendors to give you the solutions you need
- **Access to valuable information** you and your company can use to gain a competitive edge

COMING TO ORLANDO
May 16-20, 2005

PLUS

THE TESTING EXPO
May 18-19, 2005

www.sqe.com/stareast

**Register Early and
Save \$200!**



visit www.sqe.com

Jakarta Commons: Uncommonly Useful

For months, I have been complaining about the great complexity of software development today, particularly as concerns enterprise development in Java. So, it is with some trepidation that I set pen to paper to recommend adoption of an additional Java library.

The complexity, let's face it, is precisely that of learning new APIs and how they function together, and so adding libraries to this already full bag of resources should be done judiciously. By any measure of circumspection, though, the Jakarta Commons would pass the test. It's probably the largest and most useful library no one has heard of.

While Jakarta Commons might not be well known, it is widely used. If you have a copy of Hibernate, Tomcat or Jakarta Struts running on your system, you already have Jakarta Commons (or simply, the Commons) as well. It is a collection of routines that provide tremendous utility in various domains I'll explore shortly. And because it is used throughout Jakarta projects, it has been thoroughly tested.

As with all projects under the aegis of the Apache Software Foundation, Jakarta Commons is open-source and can be used freely in commercial and closed-source applications. You can download the library at jakarta.apache.org/commons.

The library is broken down into 32 separate packages that provide a wide range of utility: everything from e-mail sending, file uploads and an HTTP client, to database and transaction functionality. However, the aspect of the Commons that delivers the greatest immediate utility is the low-level functionality and the primitives.

Commons Collections greatly amplifies the Java collections added to JDK 1.2. It has bags, buffers, ordered maps, and sets that retain the order in which elements were inserted, maps where a single key can have multiple values, collections with least recently used tracking, iterators with predicates (filters elements in or out) and so on. Combined with Java's existing collections, this library should remove the need to custom-write anything but the most obscure collections.

The string and text-manipulation routines are also enormously helpful. For example, searching for text that is enclosed by two other strings (let's say those enclosing strings are `<head>` and `</head>` or any other XML tag pairs). Or splitting a string using several different character delimiters, doing word wrapping, Hex4 conversion, Soundex compu-

tation and so on. This library is extensive, and several functions overlap with string functionality added in JDK 1.4. This overlap is a benefit if you are working on a project that must compile and run on JDKs prior to 1.4, as you now have a library that provides the routines without breaking early JVM compatibility.

Integration Watch



Andrew Binstock

The math package in Commons provides support for complex numbers, statistical functions, linear algebra and various data-generation needs. The latter includes random-number generators, random string generators, and cryptographically secure random numbers. The complementary functions that analyze distributions of values in a file are bundled as well.

There are two more useful aspects to Commons. The first is a command-line interface library that handles the dozens of different ways command lines can be parsed. The other is a logging interface. Commons logging provides a generic front end to the various logging mechanisms. If at runtime none of the standard logging frameworks is available (such as the Jakarta project's own Log4J), then the Commons logging falls back to its own

built-in lightweight logger. In this way, you can always write to the Commons logging interface confident that some mechanism will handle the task.

One of the reasons Jakarta Commons is so little known is that there is not much available documentation of the product, beyond Javadoc. However, O'Reilly & Associates recently put out a book that serves as a good introduction and documentation to much of the libraries ("Jakarta Commons Cookbook," by Timothy O'Brien, 2004).

The Jakarta Commons is not the only remarkable library to spring from a large open-source project. Another that comes to mind is the Netscape Portable Runtime (NSPR), available at www.mozilla.org/projects/nspr/index.html, which is a C/C++ library that is incredibly portable (Windows going way back, Macintosh, Linux and many versions of Unix). It fills in for some of the less portable C/C++ functions, as they were encountered by developers at AOL, iPlanet, Mozilla and Netscape. These include threading interfaces, time/clock functions, memory management, data primitives and the like.

There are other libraries like Jakarta Commons and NSPR, and they suggest that a little-appreciated aspect of open-source projects is the set of tools built along the way. ■

Andrew Binstock is the principal analyst at Pacific Data Works.



telerik.rad.editor is the leading WYSIWYG rich-text editor for ASP.NET. The product can replace any `<textbox>` with an intuitive Word®-like editor, which enables even non-technical users to author and manage HTML content as easily as writing a document.

What's new in v4.0:

- "Section 508"-compliant content
- Enhanced interface and tools
- Four ways to strip Word formatting
- CSS-based skinning
- Improved HTML output
- New table management tools
- Code indentation in HTML mode
- Support for .NET v2.0
- Support for Windows XP SP2

r.ad.editor is available as an individual component or as part of the r.ad.controls suite for rapid ASP.NET development.

If everything in life could be that easy.

telerik
r.ad.editor
the high-end WYSIWYG editor



The new r.ad.editor v4.0 for ASP.NET. Flexible, robust, naturally intuitive. Makes you wish you had something like it in real life.

www.telerik.com

Copyright © 2005 Telerik. All rights reserved. All product names are property of their respective owners. Microsoft is a registered trademark of Microsoft Corporation in the United States and other countries.

Sun's Golden Opportunity

It seems we spill an awful lot of ink here pointing out what we perceive as the missteps taken by Sun as it tries to gain market share in the Java platform and tools space.

Goodness knows, there have been plenty of them. Despite owning the Java technology, the company's application server and the tools it acquired from Forte, then renamed about a half-dozen times, never caught on with development and IT shops.

Is Sun's technology that bad? Do people not trust the company? I sit here scratching my head (as do, I'm certain, CEO Scott McNealy and president Jonathan Schwartz), wondering why Sun has been unable to have any significant penetration at all in the developer community. BZ Research, our sister company, does an annual Java study, and Sun's tools and runtime environment are always well down the list of products our respondents say they use.

It's certainly not for a lack of name recognition. Everyone in the industry knows Sun. It just seems that not everyone is sure what Sun is—including, perhaps, its own PR people. At SD Times, we get bombarded with story pitches...64-bit capability, SPARC processor updates, open-source Solaris, Java Enterprise System...and we dutifully report on these developments, as do most other publications in the industry.

The problem is, there is no coherent thread tying it all together. When we hear from IBM, for example, or Microsoft, every announcement it makes is tied back to some over-riding

strategy or philosophy, no matter how much of a stretch it might seem. Not only does Sun continue to fail to provide a vision for where it's going with its development tools and deployment platforms, but it often seems out of step with what the community wants.

Early on in the life of Eclipse, after some nonsense about snubs over not being invited to join in, Sun had an opportunity to be a significant partner in the development of the open-source tools framework. Instead, Sun continued to push its own NetBeans initiative. Since then, Eclipse partnerships have gone through the roof, as seen by the momentum behind the EclipseCon conference, while NetBeans makes little noise. Yet Sun stubbornly keeps pushing NetBeans.

Then there is JDO. Sun and its Java Community Process hit on a winner there, providing a way to do object mapping to relational databases that the industry was clamoring for. Instead of advancing it, Sun created confusion by issuing a letter saying it wanted unified object persistence in the Enterprise JavaBeans and Java Data Objects specifications, and then sparked the ire of the Java community when it announced at JavaOne last May that it would abandon the JDO spec. So, in January, the Java Community Process executive committee for J2EE/J2SE rejected JDO 2.0, thinking Sun no longer was behind that effort. But after more than 1,000 developers petitioned the JCP, the JDO 2.0 spec was approved. Sun turned a slam dunk into a near disaster.

There is, though, one place where Sun still has a chance to win—Java Studio Creator.

Introduced at JavaOne in 2003, Java Studio Creator is Sun's IDE for creating database-based Web applications. Incorporating JavaServer Faces and Struts beneath it, the tool is designed for corporate developers who only need the full Java platform capabilities once in a while, and who need a visual tool to bring components together without having to do a lot of code writing. And Sun last month announced the new features that will be included in version 2, due this summer.

IBM is targeting the same level of developer with its Workplace initiative, although Java Studio Creator is based on the Java programming language while Workplace has JavaScript as its primary programming language. Rational also was targeting this area when it announced its XDE effort prior to being acquired by IBM, but that seems to have taken a backseat to Workplace.

According to a survey of users on developer.com, a tool that lets corporate users create Web applications but can be handed off to Java developers if a higher level of Java functionality is required resonates well. One commented on that site, "It's the ideal pathway to simplifying IT infrastructure and reducing development complexity for developers throughout an organization."

Of course, if Java developers rally behind Java Studio Creator, other vendors, as well as groups like Eclipse, will bring similar tools to market. The lead position is Sun's to lose. Only by keeping a clear vision and message for Web application development will Sun be able to put—and keep—Java Studio Creator in the "win" column. ■

David Rubinstein is editor of SD Times.

Industry Watch



BUSINESS BRIEFS

Japanese computer giant **Fujitsu** and German integration solution provider **Software AG** have announced a partnership under which they will jointly develop a solution for implementing service-oriented architectures. No product specifics were announced, but Fujitsu's Thomas Gronbach, marketing manager for the Software AG project, said something should be available by the summer. The two companies will jointly develop, sell and support the new solution. "We want to appear as one entity to our customers," he said. Gronbach hinted the new offering would be based on some combination and reworking of components from Software AG's Xintegration suite and Fujitsu's Interstage suite. The new solution also will include an integration metadata repository, which "is lacking in many SOA stories we've seen," Gronbach said. . . . Intelligent Enterprise, **CMP Media's** magazine about the management of business information, has reduced its publication frequency from 18 times annually to monthly. . . . Embedded software solutions provider **VenturCom** has changed its name to **Ardence**. The company said its move into enterprise solutions has dictated both a change in strategy and a change in branding.

EARNINGS: **BEA** reported revenue of US\$1.080 billion for the fiscal year ended Jan. 31, a 7 percent increase over fiscal 2004, it announced. For the year, BEA claimed GAAP operating income of \$194.9 million, and a 32-cents-per-share diluted net income. For the fourth quarter, revenue was \$290.8 million and operating income was \$59 million. BEA reported fourth-quarter license revenue of \$131.8 million, down from \$143.1 a year earlier. . . . Business integration software com-

pany **TIBCO** announced preliminary financial results for the fiscal first quarter ended Feb. 27, projecting revenue in the range of US\$100 million to \$102 million, and license revenue to be between \$47 million and \$49 million. The company called the results disappointing, and cited a "lack of execution" in Europe. TIBCO plans to address this issue by, among other things, making changes in the leadership in Europe as well as sales process and procedural changes. In addition, several transactions were delayed near the end of the quarter. "Given the strength we were seeing in our business and pipeline coming into Q1, and as late as the first part of last week, I did not expect us to produce such disappointing results," said Vivek Ranadive, TIBCO's chairman and CEO. "I believe the issues that led to the shortfall can be corrected and I plan to move swiftly to do just that." Earnings per share for the quarter are expected to be between 3 and 4 cents. . . . **Raining Data** reported revenue of US\$5.7 million and an operating loss of \$40,000 for the third quarter of fiscal 2005, ended Dec. 31. Loss per share was 1 cent, but cash increased to \$9 million, up from \$7.8 million in March 2004. . . . **MKS** announced it posted revenue of US\$10.6 million for the third quarter of fiscal 2005, ended Jan. 31. That, the company said, was an increase of 46 percent from the same period a year ago. Net income was \$800,000, or 3 cents per share. SCM revenue was a record \$8.3 million for the quarter, representing 108 percent growth year over year. "In addition to continued growth and profitability, we were delighted with the high number of new beachhead wins in major corporate accounts," said Philip Deck, MKS' chairman and CEO. ■



CALENDAR OF EVENTS

ASP.NET, Visual Studio and SQL Connections March 20-23

Orlando, Fla.
PENTON MEDIA
www.devconnections.com

BrainShare March 20-25

Salt Lake City
NOVELL
www.novell.com/brainshare

Web Design World March 21-23

San Francisco
FAWCETTE TECHNICAL PUBLICATIONS
www.webdesignworld.com

PyCon (Python Conference) March 23-25

Washington, D.C.
PYTHON SOFTWARE FOUNDATION
www.python.org/pycon/2005

USENIX April 10-15

Anaheim
THE USENIX ASSOCIATION
www.usenix.org/events/usenix05

Software Security Summit April 12-14

San Diego
BZ MEDIA
www.S-3con.com

Gartner Application Integration and Web Services Summit April 18-20

Los Angeles
GARTNER
www.4.gartner.com/2_events/conferences/apn14.jsp

MySQL Users Conference April 18-21

Santa Clara
MYSQL AND O'REILLY MEDIA
www.mysqluc.com

Linux on Wall Street April 20

New York
FLAGG MANAGEMENT & LIGHTHOUSE PARTNERS
www.linuxonwallstreet.com

WinHEC April 25-27

Seattle
MICROSOFT
www.microsoft.com/whdc/winhec

Windows Driver DevCon April 25-28

Seattle
MICROSOFT
www.microsoft.com/whdc/driverdevcon

ASNApalooza (RPG Conference) April 27-29

San Antonio
ASNA
palooza.asna.com

Microsoft Mobile & Embedded DevCon May 9-12

Las Vegas
MICROSOFT
www.medic2005.com

For a more complete calendar of U.S. software development events, see www.bzmedia.com/calendar.

Information is subject to change. Send news about upcoming events to events@bzmedia.com.



BZ MEDIA WEB SEMINARS

Five Factors for Finding Test Automation Success March 22

Time: 11 a.m. Pacific (2 p.m. Eastern)
SEGUE AND SOFTWARE TEST & PERFORMANCE
www.bzmedia.com/webseminar

WRITING CODE CAN BE A DRAG. OR IT CAN BE DRAG AND DROP.



Introducing Sun Java™ Studio Creator.



The Network is the Computer™

The visual development solution from the makers of Java technology.

With Java Studio Creator, Java programming is simpler than ever. This powerful next-generation development tool allows you to quickly and efficiently build Java applications using an intuitive visual interface. And you can do it for just \$99. Start harnessing the power of Java technology for your business today—with Java Studio Creator.



developers.sun.com/buycreator

A large, stylized blue letter 'Q' is positioned in the upper left corner of the advertisement.

**How many Java programmers
does it take to screw in a light bulb?**

A large, stylized blue letter 'A' is positioned in the middle right section of the advertisement.

Eight.

**One to screw in the light bulb.
Seven to debate the optimum wattage,
which light bulb pattern gives more light,
who is the best light bulb vendor,
whether to use an open source light bulb,
which performs best on the ECPeef benchmark,
and how to insulate the bulb from a
change in socket architecture.**

**There's an easier, faster way.
www.deliverjavaapps50percentfaster.com**